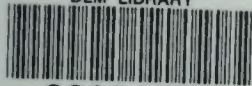


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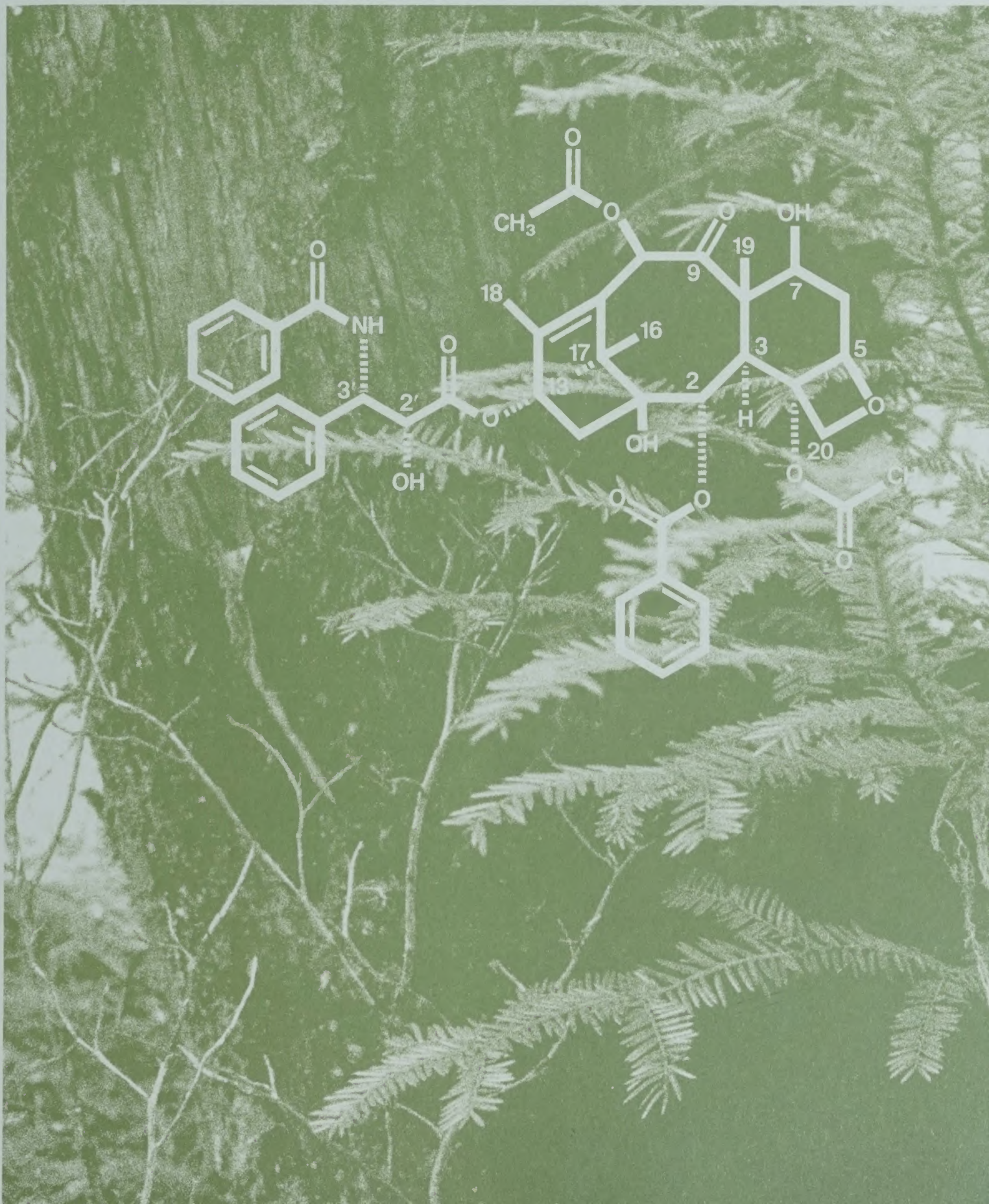
Food and Drug
Administration



Pacific Yew

Final Environmental Impact Statement

September, 1993 ☐ Appendices - Volume 1





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Appendices

Volume 1

Pacific Yew Final Environmental Impact Statement

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Appendix A

Public Involvement

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Appendix A

Public Involvement

Changes Made Since the Draft EIS

Appendix A

Added copies of all comments received for the Pacific Yew Draft EIS,
and our response to these letters.

Appendix A

Public Involvement

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Philosophy

Public involvement has been an integral part of the Pacific yew environmental impact statement (EIS) from the early stages to the present. According to NEPA (the National Environmental Policy Act), public issues must be addressed early in the process of preparing an EIS.

We used a number of public involvement methods. Our basic technique, which fit our philosophy, was “fish bowl planning.” We attempted to make our decision-making process transparent to the public, to think out loud in front of everyone. We did this by first identifying all those who would or could be interested in the project, locally, nationally, and world-wide. We then sent letters and press releases, made telephone calls, attended meetings, produced and mailed newsletters, and analyzed the responses we received.

The public not only told us what the issues were, but also suggested items the alternatives should include, and what could be done to mitigate impacts on the environment.

The team gathered issues and suggestions and continued to process responses throughout the project. The public comments were used to help the team analyze the data, then formulate and evaluate alternatives, and recommend one.

Initial Issue Gathering

The Pacific yew newsletter was the main vehicle we used to gather public issues surrounding the harvest of Pacific yew from federal lands for the production of the cancer-fighting drug, taxol. The newsletter included a section for readers’ comments to be returned to us.

Members of the Pacific Yew EIS team also met with various groups to discuss yew, taxol, and the EIS. On other occasions team members presented formal or informal talks on these subjects and used these opportunities to gather comments.

The first Pacific Yew Newsletter, December 1991 (see the end of this appendix for a copy) was distributed in late December and early January to more than 20,000 citizens, groups, local governments, businesses, agencies, research facilities, hospitals, and universities. We asked for issues and concerns regarding the harvest of Pacific yew on national forest and Bureau of Land Management lands.

Response to December 1991 Pacific Yew Newsletter

Most readers wanted us to harvest yew for the production of taxol, but at the same time protect the Pacific yew species and its environment; this was the major issue. Other comments concerned the "how to's," suggestions for ways we could approach solving the problem of how to provide taxol and protect the yew and its ecosystem. We grouped the comments into the following categories listed here, beginning with the category that received the largest number of comments:

Number of Comments

Comment Categories

Issues

277

Provide material from the Pacific yew tree for the production of taxol for the treatment of cancer patients.

Protect the yew species.

Protect the ecosystem.

Suggestions

211

Establish a sustainable level of collection—analyze minimum to maximum amounts.

172

Consider social, cultural, and tribal impacts of collecting yew.

166

Regenerate yew— plant and manage for natural regeneration.

139

Consider the economic impacts of yew collection on timber production, local employment, and sustained forest ecology to ensure future supplies of taxol and other possible drugs, and agreements for taxol production.

| | |
|-----|---|
| 125 | Establish areas of collection— decide whether or not to enter set-aside areas such as wilderness, spotted owl habitat, Research Natural Areas, and roadless areas; decide whether or not to build new roads for access; and concentrate collection in certain areas or spread collection over wide areas. |
| 119 | Establish collection methods— partially or wholly strip bark or fell trees; collect needles and twigs. |
| 115 | Utilize the yew completely— all bark, twigs, needles, and wood. |
| 112 | Develop other sources of taxol as soon as possible. |
| 107 | Stop theft and illegal harvest. |
| 30 | Miscellaneous. |

| Number | Categories of Respondents |
|---------------|---|
| 621 | Individuals and families |
| 62 | Interest groups |
| 55 | Businesses |
| 29 | Other agencies |
| 24 | Forest Service |
| 21 | College, universities, research |
| 17 | Medical professionals |
| 5 | Newspapers, radio, television reporters |

834 Total

| Number | Geographic Distribution |
|--------|-------------------------|
|--------|-------------------------|

| | |
|-----|----------------|
| 475 | Oregon |
| 156 | Washington |
| 113 | California |
| 33 | Idaho |
| 11 | Montana |
| 6 | Arizona |
| 5 | Utah |
| 4 | Maryland |
| 4 | Pennsylvania |
| 4 | Washington, DC |
| 3 | Canada |
| 3 | New York |
| 3 | Virginia |
| 2 | Colorado |
| 2 | Illinois |
| 1 | Hawaii |
| 1 | Iowa |
| 1 | Kansas |
| 1 | Massachusetts |
| 1 | Michigan |
| 1 | Minnesota |
| 1 | New Hampshire |
| 1 | New Jersey |
| 1 | Tennessee |
| 1 | Wisconsin |

834 Total

Issues and Suggestions

Issue Provide material from the Pacific yew for taxol: Most people who responded want material from the Pacific yew to be available for the production of taxol and its use in clinical trials and treatment of ovarian and possibly other cancers. Some say saving human lives should be top priority; yew harvests should be maximized regardless of environmental impacts and wilderness and roadless areas should be opened for yew collection. Others say, although taxol should be made available, the yew tree and the ecosystem are important in themselves and for future generations and deserve protection; the harvest of yew for taxol should proceed with care, caution, and safeguards.

Issue Protect the ecosystem: People who commented want protection for the yew's ecosystem in order to ensure forest diversity. They want studies of the role yew plays in its community and the impact of yew harvest; some feel the forest has already been ruined by harvests. A major concern within ecosystem protection is the old growth or ancient forests; people want to protect and sustain ancient forests for future generations and for the unknown resources they may contain. Other concerns regarding the health of the ecosystem are for protection and understanding of:

Wildlife, including deer, elk, moose (Idaho and Montana), birds, insects, the northern spotted owl and other threatened or endangered species; riparian zones, watersheds, and fish habitat; plants, including fungi; soils and soil organisms; and aesthetics.

Issue Protect Pacific yew and maintain its genetic diversity: The concern is for careful management to protect the Pacific yew and its gene pool, balancing short- versus long-term needs for taxol. People want studies of yew in order to understand how to maintain the population and provide a viable gene pool for the future. With recent reports of infection of small amounts of yew trees with the root disease *Phytophthora lateralis*, found in Port-Orford-cedar, people want to know what steps can be taken to protect yew.

Analyze and establish a suitable and sustainable level of harvest and taxol production: This issue refers to the need for an accurate inventory of Pacific yew and its range in order to avoid over-harvesting, and to carefully manage for present needs and future generations.

Suggestion

Consider cultural, social, spiritual, and tribal values of yew: Most people who responded were in favor of utilizing a balanced system of harvest while preserving the yew at historic levels, and giving consideration to multiple use and whole-ecosystem health. Many people felt that more attention should be given to the spiritual, cultural, and historical value of the yew. Some said that because Native Americans have a long tradition of using the yew for its healing powers, they should be guaranteed continued access to the tree. At least two respondents suggested getting direct tribal input for the EIS. Several people felt that the yew is sacred, and no harvesting of wild stands should take place. A significant number of others, however, said saving human lives should be top priority. Many felt yew harvests should be maximized regardless of environmental impacts. Some said they would like to see wilderness and roadless areas opened for yew collection.

Suggestion

Plant and manage for natural regeneration of Pacific yew: In this case, people who commented were concerned about protecting the Pacific yew as a future resource. Most who commented agreed with harvesting yew trees for taxol, as long as sound reforestation practices that allow for natural regeneration or call for replanting are in place, and that nursery propagation efforts continue.

Suggestion

Consider the economic effects of yew collection on resources, economies, and future options: Here, many people commented that maintaining a sustained forest ecology is essential for ensuring the future of taxol and other important drugs yet to be discovered.

Suggestion

A significant number of people said they think the agreement with Bristol-Myers Squibb company is "monopolistic," and that many companies, not just one, should benefit from taxol production.

The economic impacts of yew harvest and bark collection on the timber industry was another area of concern. Several people suggested that yew harvesting take place only in active timber sale areas. Some expressed concern over whether yew harvest and bark collection projects are used to provide jobs for local residents, especially in areas where there are a significant number of displaced timber workers.

Suggestion **Establish and define areas of collection or reserve areas:** In this issue the number one public concern is the Forest Service treatment of set-aside areas. Sentiment is divided between those favoring absolutely no harvest in any set-aside area— Research Natural Areas (RNAs), wilderness, and Owl Conservation Areas (OCAs); limited harvest in these areas; and those favoring comprehensive harvest of yew wherever it is found in whatever quantity needed. Many people think that old growth forests should be left alone, although minimum intrusion may be allowed for research and inventory purposes.

Suggestion **Establish collection methods:** In this case, many people want to know what kinds of yew harvest methods will be allowed, and how harvests will be incorporated into existing forest management prescriptions. Some said efficient collection methods should be established to ensure full utilization of the tree. Others said harvest methods that result in the death of the tree should be discontinued. Several people asked whether the yew trees can survive if they are partially stripped of their bark. A small number of respondents said only the needles and twigs should be collected. At least two people asked for a definition of “harvest” in regards to the yew.

Suggestion **Utilize all parts of harvested yew:** Most people who commented want the whole yew tree to be used if the bark is going to be collected. They suggest it be used (perhaps commercially, for a fee) for fence posts, fire wood, bows, musical instruments, ornamental wood working, tool handles, and lumber.

Many people are concerned about waste of the tree during the harvesting process and want all bark from large and small limbs to be collected; they don't want to see the remaining tree burned

or left to rot. Many want the small branches and needles to be used as well as the bark; some suggest collecting needles instead of bark in order to save the trees. Others would like to see the entire tree used for the extraction of taxol.

Develop other sources of taxol as soon as possible: Many people called for the development of other sources of taxol as soon as possible, to avoid the burden on the yew species and the impacts of a long-term harvest program.

Suggestion

Many wanted to see a progress report on the development of other sources of taxol through synthesis, semisynthesis, cell culture, nursery propagation, heartwood extraction, and needle extraction.

Some people feel the Forest Service and BLM should fund research into alternate methods of producing taxol. Several say that taxol will soon be synthesized and the need for yew harvest will diminish. A few people asked what will become of the yew when it is no longer desired for its taxol.

Stop theft and illegal harvest of yew: Many people expressed concern about the theft and illegal harvest of wild yew trees. Most wanted to know how illegal harvest would be stopped, and what kinds of punishment poachers would face if caught. Many felt there should be serious consequences for stealing yew trees. Some people questioned how to protect wild yew trees on their private lands. At least one respondent suggested using public awareness to monitor poaching and discourage theft.

Suggestion

Miscellaneous comments: People expressed the following concerns and thoughts: After years of treating Pacific yew as a “weed” tree, we now find it to be a “lifesaver.” We should research any other species of *Taxus* throughout the United States and the world. One never knows what could be found. We need to be extremely cautious about labeling plants as “trash.” How many other species have potential lifesaving cures? We won’t know without thorough research starting back 10,000 years ago to the present era. Included in this research should be: identify high-yield and single yew tree populations; what age and/or time of year is Pacific yew richest in taxol-producing molecules; and the concept

of “taxol farms” and how much could be produced this way. Pacific yew harvests could be taxed to help pay for this and other taxol research.

There is a question of whether or not an EIS is really necessary. If necessary, the EIS should be concise and in layman, not technical terms. Cost of the yew program is of concern and the public expects the Forest Service to be proactive and share whatever information there is, good or bad.

There is public misunderstanding of the word “harvest.” There is some feeling that use of this word means the Forest Service will cut down every Pacific yew that can be found. A more value-less word would be preferred.

Will excessive environmental controls impact mining and mineral rights on public lands, and if so, how.

If the connection between taxol and cancer has been known for years, the government should pressure the FDA to set up approval of taxol synthesis for human use. An unedited short paper should be done on synthesis, expected side effects, and production timelines by an organic chemist and a pharmacologist. These people could give the most recent up-to-date information.

Yew bark harvesters should be trained to recognize Pacific yew so that other trees will not be damaged through ignorance.

Our second Pacific Yew Environmental Impact Statement newsletter, dated February 1992, was mailed in early March (see the end of this appendix for a copy).

Response to February 1992 Newsletter

About 100 people wrote to us in response to the February newsletter. In summary, this is what readers said:

Many readers liked the information in the February newsletter and thought we were on track with the issues, with some exceptions from those who felt we've done and are doing a poor job with forests in general.

About 20 readers responded to the issue of whether or not to enter set-asides such as wilderness areas and Owl Conservation Areas by saying "no," don't enter these areas. In the words of one reader from Etna, California, "Such entry, harvest and yew removal would seriously disrupt other major values for these natural ecosystems...". On the other hand, two readers feel we should enter any areas where yew trees grow in order to get taxol for research.

Other common comments were:

- Continue to encourage the development of other sources of taxol.
- Protect the overall forest health and ecosystems for the future.
- Regenerate yew (work on propagation techniques).
- Maintain a sustained yield of yew.
- Concentrate on needle and twig harvest rather than bark.
- Utilize as much of the yew tree as possible for taxol.

| Number of Comments | Comment Categories |
|-----------------------|---|
| 56 | Protect the ecosystem (riparian areas, wildlife, other plants, soil, fire cycles, old growth forests) and the Pacific yew gene pool (establish reserve areas or numbers of reserve trees). |
| 22 | Consider social, cultural and tribal impacts of collecting yew. |
| 21 | Establish areas of collection— decide whether or not to enter set-aside areas such as wilderness, spotted owl habitat, Research Natural Areas, and roadless areas; decide whether or not to build new roads for access; and concentrate collection in certain areas or spread collection over wide areas. |
| 20 | Develop other sources of taxol as soon as possible. |
| 17 | Establish a sustainable level of collection— analyze minimum to maximum amounts. |
| 17 | Utilize the yew completely— all bark, twigs, needles, and wood. |
| 17 | Consider the economic impacts of yew collection on timber production, local employment, sustained forest ecology to ensure the future supplies of taxol and other possible drugs, and agreements for taxol production. |
| 12 | Establish collection methods— partially or wholly strip bark or fell trees; collect needles and twigs. |
| 12 | Regenerate yew— plant and manage for natural regeneration. |
| 11 | Stop theft and illegal harvest. |
| 23 | Miscellaneous. |

Number Categories of Respondents

| | |
|----|---|
| 67 | Individuals and families |
| 9 | Businesses |
| 8 | Interest groups |
| 7 | Other agencies |
| 5 | Medical professionals |
| 4 | College, universities, research |
| 3 | Forest Service |
| 0 | Newspapers, radio, television reporters |

97 Total

Number Geographic Distribution

| | |
|----|----------------|
| 47 | Oregon |
| 17 | California |
| 16 | Washington |
| 5 | Idaho |
| 4 | Montana |
| 2 | Arizona |
| 1 | Maryland |
| 1 | Michigan |
| 1 | New Hampshire |
| 1 | Utah |
| 1 | Washington, DC |
| 1 | Canada |

97 Total

Our third Pacific Yew Environmental Impact Statement newsletter, dated June 1992, was mailed in early July (see the end of this appendix for a copy).

A summary of the responses to the proposed alternatives described in this newsletter will appear in this appendix when the final EIS is published.

Response to June 1992 Newsletter

Appendix A

Newsletters

First Newsletter

December 1991

THE FIRST NEWSLETTER OF THE BOARD OF DIRECTORS

The Board of Directors of the City of New York is pleased to announce the publication of the first newsletter of the Board of Directors.

The newsletter will provide information on the activities of the Board of Directors and the City of New York.

The newsletter will be published quarterly and will be available to all members of the public.

The newsletter will be published in both English and Spanish.

The newsletter will be published in both print and electronic formats.

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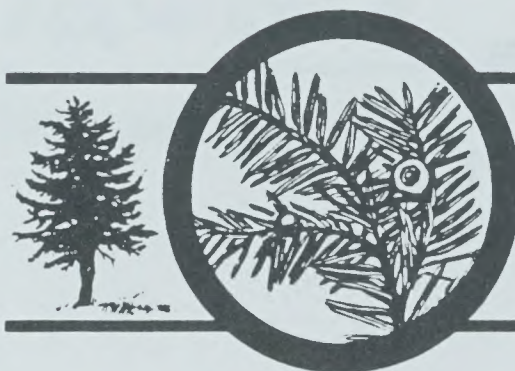
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The newsletter will be published in both print and electronic formats.

The newsletter will be published in both print and electronic formats.

December 1991



Pacific Yew

ENVIRONMENTAL IMPACT STATEMENT

What's so important about the Pacific yew?

An often overlooked species in our western forests, the Pacific yew has recently emerged from obscurity. It is now a species in demand because of the discovery that it yields taxol, an anticancer drug found to be 30 to 35% successful in the treating of ovarian cancer patients that have not responded to previous treatment. Taxol has shown promise in the treatment of other cancers.

People are talking . . .

"Taxol's status as a hot new cancer drug has given researchers an opportunity to help solve a societal problem of pressing importance."

—Stu Borman, writer for Chemical and Engineering News

"For the short term we will be living with inadequate supplies of this drug, but in the long term the problem is going to be solved."

—Samuel Broder, National Cancer Institute director

"In the meantime, traditional plant sources must be used to meet immediate research needs."

—James C. Overbay, deputy chief of the Forest Service

"There will be rapidly increasing demand for taxol as we begin studies on use of the substance to treat other forms of cancer."

—Dr. Saul A. Schepartz of National Cancer Institute's Developmental Therapeutics Program

"It ought to be a firm message that there's been too much wastage and not enough management."

—Congressman Ron Wyden, commenting on "The Pacific Yew Act of 1991"

"If we expect to increase the production of taxol and conserve the yew species, we must proactively manage forests on the public lands."

—D. Dean Bibles, Oregon / Washington State Director of the BLM

"Optimize use for human beings, minimize environmental impacts."

—Diane Di Furia, Bristol-Myers Squibb Company

"The conflict is, there are no such lands where taxol production is the priority. The priority still remains the production of Douglas-fir wood fiber."

—Wendell Woods, Oregon Natural Resources Council



"I've had the conventional chemotherapy for ovarian cancer, and it didn't work . . . Taxol may be my last hope."

—Sally Thane Christensen, "Is a Tree Worth a Life"

What Are the Effects of Collecting Yew? Or, Why this Environmental Impact Statement?

Since most of the Pacific yew available to supply bark (from which taxol is extracted) is found on federal lands managed by the USDA Forest Service and the US Bureau of Land Management, these agencies will prepare an environmental impact statement to analyze the effects of yew collection on the environment. The Forest Service is the lead agency; BLM, the National Cancer Institute, and the U.S. Food and Drug Administration are cooperating agencies.

In this EIS we will analyze the effects of harvest on the yew's ability to regenerate, its genetic diversity, and its place in forest ecosystems. We will propose, study, and weigh various harvest alternatives.

USDA Forest Service  US Bureau of Land Management 
U.S. Food and Drug Administration

We will focus on the short and long-term effects of a five-year harvest program. The need for yew bark from forest trees is expected to decrease as researchers find ways to extract taxol from needles and heartwood, propagate yew and extract taxol from clippings at yew nurseries, semi-synthesize and totally synthesize taxol and its related compounds, and produce taxol through tissue culture.

Possible Alternatives

Alternative yew harvest programs that we will propose in this EIS could cover various yew harvest levels — from no harvest at all to a high level. Methods of harvest and utilization of the tree could be important parts of each alternative. Concurrently, the Forest Service and the Bureau of Land Management are conducting yew surveys and inventories; these will help us estimate how much yew is present and help us analyze the impacts of alternate programs on the species. A technical team is preparing conservation guidelines for the Pacific yew.

The Future of Taxol Production

"Nobody owns the compound. We didn't patent it when we isolated it."

—Monroe E. Wall, chemist with Research Triangle Institute

Researchers at companies, universities, and agencies world-wide are working to develop taxol or a closely related drug from bark, needles, heartwood, yew nurseries, tissue culture, semi-synthesis and total synthesis.

Here is a partial list of some of the current research and development of taxol:

Rhone-Poulenc Rorer, a French pharmaceutical firm, has developed Taxotere, a taxol analog made by partial synthesis from a taxol precursor extracted from the needles of European yew, *Taxus baccata*.

The Weyerhaeuser Company is propagating yew at a nursery in Washington. Forest Service nurseries near Carson, Washington, Medford, Oregon, and Coeur d'Alene, Idaho, and the Chico Tree Improvement Center in California are also working with yew propagation.

Researchers at the USDA Forest Products Laboratory in Madison, Wisconsin have successfully extracted taxol from Pacific yew heartwood.

Dr. Holton and co-workers at Florida State University are working on partial and total synthesis of taxol. Thirty or more other research groups across the US are also investigating synthesis of taxol.

BLM's Horning Seed Orchard near Molalla, Oregon is planning studies of the Pacific yew, including seed germination, rooted cuttings, and transplanting.

Edward Croom, Jr. of the Research Institute of Pharmaceutical Sciences at the University of Mississippi is studying the possibilities of taxol production from ornamental yews (*Taxus* spp) in nurseries.

The NaPro Company in Boulder, Colorado is extracting taxol from yew needles in research quantities, not yet approved for human use.

Phyton Catalytic Inc. of Ithaca, New York, and ESCAgenetics of San Carlos, California, are producing taxol and taxol-like compounds from yew cells grown in culture (tissue culture).

Apologies — Have we sent you more than one copy?

This is the first of a series of newsletters about the Pacific Yew Environmental Impact Statement (EIS). In an attempt to reach many people who may be interested in the project, we have used several mailing lists and you might receive more than one copy. If you do, we apologize; perhaps you could pass the extra copy to a colleague, friend, or neighbor.

Raising Your Taxus

In the EIS we will be analyzing the impact of harvesting Pacific yew (*Taxus brevifolia*) on National Forest and Bureau of Land Management forests in Washington, Oregon, Idaho, Montana, and northern California. These are the main National Forests and Bureau of Land Management Districts where yew trees are found.

National Forest

California
Klamath
Lassen
Mendocino
Plumas
Shasta-Trinity
Six Rivers
Tahoe

Idaho
Clearwater
Idaho Panhandle
Nez Perce

Montana
Flathead
Kootenai

Oregon
Mt. Hood
Rogue River
Siuslaw
Siskiyou
Umatilla
Umpqua
Willamette

Washington
Gifford Pinchot
Mt. Baker-Snoqualmie
Olympic

BLM Districts

Oregon
Coos Bay
Eugene
Medford
Roseburg
Salem

Idaho
Couer d' Alene

Please Call Us

If you have issues and concerns you would like to discuss with the team preparing this EIS, please contact Sally or Susan. The team is available to meet with individuals or groups.

Sally Campbell, Forest Service
Pacific Yew EIS team leader (503) 326-7755
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Susan Whitney, Forest Service
Pacific Yew EIS public involvement specialist
(503) 326-7733
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

The following people can also answer your questions about Pacific yew:

Fred Page, Forest Service Pacific Northwest Region, yew coordinator, (503) 326-3538

Merril Davis, Forest Service Northern Region, yew coordinator, (406) 329-3334

Mike Srago, Forest Service Pacific Southwest Region, yew coordinator (415) 705-2697

Doug Daoust, Forest Service, interim yew conservation guidelines team leader, (503) 666-0700

Kent Tresidder, Bureau of Land Management, Oregon/Washington yew program coordinator, (503) 280-7070

Leslie Robinette, Bureau of Land Management, public affairs specialist, (503) 280-7031

Phillip G. Vincent, U.S. Food and Drug Administration, environmental assessment officer, (301) 443-4330.

Getting to Know Yew . . .

- ☐ A slow-growing evergreen tree or shrub
- ☐ Found in forests of the western U.S. and Canada
- ☐ Not a rare plant, but distribution is usually scattered except in a few locations; common in many riparian areas
- ☐ Wood is hard and prized for such items as fence posts, bows, lutes, and snowshoe frames
- ☐ Regenerates by sprouting from stumps; layering (putting roots down when branches meet the soil); and by seeds, probably transported by birds and browsing animals like deer, elk and moose
- ☐ Seeds are surrounded by a scarlet, juicy, berry-like cup called an aril
- ☐ Usually dioecious; the male flowers are on one tree, the female on another
- ☐ Some yews have been found to be monoecious, with male and female flowers on the same tree

. . . and Taxol

- ☐ Currently obtained by extraction from the bark of Pacific yew (*Taxus brevifolia*)
- ☐ The procedure for extraction is difficult, low yielding and expensive at present
- ☐ Three trees (10" in diameter) yield enough drug for one cancer patient (National Cancer Institute estimate)
- ☐ 500 patients are currently receiving the drug in clinical trials and compassionate use
- ☐ Discovered in 1963 as part of the National Cancer Institute-sponsored program to screen plants for medicinal properties
- ☐ 750,000 pounds of bark will yield about 25 kilograms of taxol, enough for some 12,000 patients

What's Next?

In the next issue of Pacific Yew we will summarize your comments, discuss the issues raised, explore more alternatives, and provide an update on yew inventories.

You Can Comment:

We are at the beginning stages of the EIS project. We need to know what issues you have regarding the harvest of yew on National Forest and Bureau of Land Management land. What concerns you? What should we address in the EIS? The issues you provide will be used to form and evaluate alternative harvest programs developed in the EIS.

Do you want to remain on the mailing list?

If you want to continue to receive information about the Pacific Yew EIS, please check the box and return this section.

Yes, I'd like to remain on the mailing list ☐

Please print

Name: _____

Address: _____

City, State, Zip: _____

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

Official Business
Penalty For Private Use, \$300

Tape to Close

Fold on This Line

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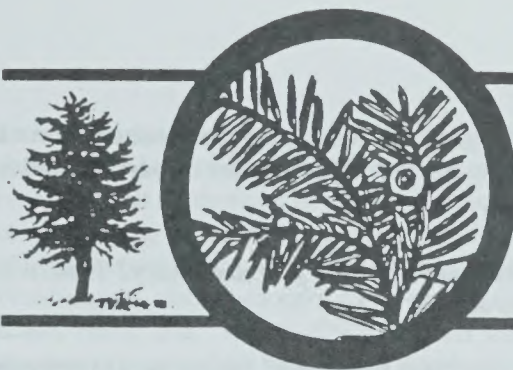
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Second Newsletter

February 1992

February 1992



Pacific Yew

ENVIRONMENTAL IMPACT STATEMENT

Thank You for Commenting

We mailed about 23,000 Pacific Yew newsletters in late December asking for your comments regarding the collection of yew bark on National Forest and U.S. Bureau of Land Management land. We asked for concerns and issues to be addressed in the Pacific Yew Environmental Impact Statement. By mid-February we had received more than 700 comments.

In summary, your primary concern, with few exceptions is:

Collect Pacific yew (*Taxus brevifolia*) bark for taxol, but at the same time, protect the species and its ecosystem.

Considering this primary concern, these appear so far, to be the main items you want us to consider:



- ☐ Establish a sustainable level of collection — analyze a range of minimum to maximum levels.
- ☐ Establish areas of collection — decide whether to enter set-aside areas such as Wilderness, spotted owl habitat, Research Natural Areas, and roadless areas or to stay out of set-asides; decide whether or not to build new roads for access; concentrate collection in certain areas or spread collection over wide areas.
- ☐ Utilize the yew completely — all bark, twigs, needles, and wood.
- ☐ Establish collection methods — partially or wholly strip bark or fell trees; collect needles and twigs.

- ☐ Regenerate yew — plant and manage for natural regeneration.
- ☐ Stop theft and illegal harvest.
- ☐ Protect the Pacific yew gene pool — establish reserve areas or numbers of reserve trees.
- ☐ Protect the ecosystem — riparian areas, wildlife, other plants, soil, fire cycles, old growth forests.
- ☐ Develop other sources of taxol as soon as possible.
- ☐ Consider the economic impacts of yew collection on timber production, local employment, sustained forest ecology to ensure the future supplies of taxol and other possible drugs, and monopolistic agreements for taxol production.

Questions You Asked and Some Answers

Q. Can I grow yew? Should I grow yew? How? Where? Where can I buy yew seeds or seedlings?

A. Under most circumstances Pacific yew grows very slowly, so if you are thinking of growing it for future bark harvest, you'll have a long wait (70 to 100 years for a tree 8 to 10 inches in diameter). Growing yew for needle collection is uncertain at this time because of extraction difficulties and the fact that only taxol extracted from bark is approved for research and clinical trials by the Food and Drug Administration, although this could change. You might want to contribute to the genetic biodiversity of Pacific yew by preserving a small stand on your land.

USDA Forest Service  US Bureau of Land Management 
U.S. Food and Drug Administration

Pacific yew regenerates by sprouting from a stump when the tree is cut, by layering (when one of its branches lies on the ground long enough to put down roots), and by seeds. Although nurseries such as Weyerhaeuser and several Forest Service and Bureau of Land Management nurseries are researching yew propagation, none of them are selling yew seeds or seedlings to the public. The Forest Service nurseries are only allowed to sell surplus stock to the public and probably won't be producing surplus Pacific yew for years to come. This regulation exists so that the federal government will not be in competition with private nurseries.

Although many private nurseries grow ornamental yew varieties for hedges and landscaping, few propagate Pacific yew. Without endorsing these to the exclusion of other growers we are not yet aware of, here are the addresses of two nurseries that propagate Pacific yew:

Special Trees
P.O. Box 2238
Corvallis, OR 97339
(503) 758-7131

Green Hills Nursery
40805 Upper Nestucca Road
Beaver, OR 97108
(503) 398-5965

Q. Can I collect bark? How? Where do I sell it?

A. A principal bark buyer is Hauser Northwest Inc., 78120 Highway 99S, Cottage Grove, OR 97424, (503) 942-9655. Hauser Northwest carries the contract to supply bark to Bristol Myers Squibb Company which has an agreement to supply taxol to the National Cancer Institute.

Q. What are the Forest Service and BLM doing to stop yew theft?

A. The Forest Service is offering a \$10,000 reward for information leading to the arrest and conviction of anyone who harvests Pacific yew bark illegally on National Forest lands.

Thieves of yew bark on BLM-managed lands may face multiple felony theft charges, including a prison term, a fine of \$10,000, and seizure of bark, tools, and vehicles. You can report yew theft to BLM law enforcement agents by calling 1-800-333-7283.

Both agencies have either a permit or sale contract system for the legal harvest of bark on federal lands.

Q. Is there a Pacific yew inventory? If so, what is its status?

A. Yes, there are several Pacific yew inventories underway.

During the 1992 field season (March to October), Forest Service crews in the Pacific Northwest Region (Oregon and Washington) will complete an inventory of Pacific yew (begun in 1991) on seven national forests — Gifford Pinchot, Mt. Baker/Snoqualmie, Mt. Hood, Rogue River, Siskiyou, Umpqua, and Willamette. In the Northern Region (which includes the yew forests in Idaho and Montana), the Forest Service is inventorying 100,000 acres of the Nez Perce National Forest which contain over 80% of the tree size yew in the region.

Additional information will be provided by a survey of Forest Service lands in northern California (the Klamath, Six Rivers, Plumas and Tahoe National Forests), and by analysis of existing data for state and private lands in Oregon, Washington, Idaho, Montana, and northern California.

The BLM will conduct a Pacific yew inventory on its western Oregon forest lands, where some 90% of the species under BLM management is estimated to occur. Maps delineating three levels of yew occurrence will be completed by field staff in April. Field sampling will begin shortly after that and inventory results are anticipated by the end of December.

Private Nurseries are Researching Yew Propagation for Taxol Production

The development of alternative sources of taxol is being pursued actively by both the National Cancer Institute and Bristol-Myers Squibb. The CRADA (Cooperative Research and Development Agreement) requires them to develop alternative sources as soon as possible.

The Weyerhaeuser Company, in an agreement with the Bristol-Myers Squibb Company, is engaged in research and cultivation of domestic yew to provide a reliable, long-term, affordable supply of taxol. At the Weyerhaeuser Regeneration Facility near Rochester, Washington, local workers have been hired to sort, wash, trim, and "stick" cuttings from various yew species into growing containers that look somewhat like ice cube trays. The idea is to grow yew seedlings in the greenhouse and in nursery beds for three or four years and then use the biomass — stem, twigs, needles, and perhaps roots — for the extraction of taxol. Weyerhaeuser hopes to grow 5 million rooted yew cuttings in 1992.

Presently, the bark of the Pacific yew is the only FDA approved source of taxol for research and clinical use. If the Weyerhaeuser yew cultivation project is successful, it may present a solution to the issues surrounding the collection of Pacific yew bark in the wild.

In a similar vein, the National Cancer Institute transferred funds (\$250,000) to the USDA Cooperative State Research Service which then added \$60,000 of its own to provide \$310,000 to Zelenka Nursery in Michigan; Zelenka Nursery is coordinating the project with the University of Mississippi, Ohio State University and several other nurseries. Together, these groups are researching the best methods for harvesting and drying needles and twigs from ornamental yew (*Taxus media v. hicksii*). They will supply dried biomass to the National Cancer Institute. NCI will contract the extraction of taxol from the biomass and then transfer the material to Bristol-Myers Squibb for final purification of taxol; Bristol-Myers Squibb will then forward to the NCI clinical supplies of taxol.

Please Call Us

If you have issues and concerns you would like to discuss with the team preparing this EIS, please contact Sally or Susan. The team is available to meet with individuals or groups.

Sally Campbell, Forest Service
Pacific Yew EIS team leader (503) 326-7755
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Susan Whitney, Forest Service
Pacific Yew EIS public involvement specialist
(503) 326-7733
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

The following people can also answer your questions about Pacific yew:

Fred Page, Forest Service Pacific Northwest Region,
yew coordinator, (503) 326-3538

Merrill Davis, Forest Service Northern Region, yew
coordinator, (406) 329-3334

Mike Srago, Forest Service Pacific Southwest Region,
yew coordinator (415) 705-2697

Doug Daoust, Forest Service, interim yew conserva-
tion guidelines team leader, (503) 666-0700

Kent Tresidder, Bureau of Land Management, Or-
egon/Washington yew program coordinator, (503)
280-7070

Leslie Robinette, Bureau of Land Management, public
affairs specialist, (503) 280-7031

Phillip G. Vincent, U.S. Food and Drug Administra-
tion, environmental assessment officer, (301) 443-4330.

Getting To Know Yew... ^{1/}

(continued from December 1990)

☐ Yew is a slow growing conifer rarely exceeding 24 inches in diameter and 60 feet in height; its needles are dark green, two ranked, and spirally arranged on the twigs; the bark is purplish, papery thin, and scale-like; the crown tends to be ragged and lopsided.

☐ Yew is often found in the understory of old-growth Douglas-fir forests, but it also occurs in some stands less than 10 years old; it is considered a late seral to climax species (a late to final species in a community of plants achieved through successful adjustment to an environment).

☐ It is present in an extremely large number of plant communities.

☐ In western Oregon and Washington, yew often grows with western hemlock, Pacific rhododendron, and beargrass.

☐ It is found over a wide range of moisture and temperature conditions and elevations, even growing in non-forest areas such as avalanche chutes, talus and scree slopes, and rocky cliffs.

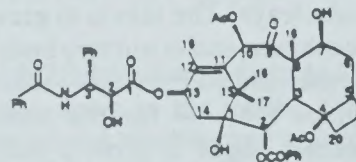
☐ The establishment of Pacific yew is influenced by fire history, browsing animals, its ability to compete successfully, climatic conditions, and seed crops.

☐ It is extremely variable in growth form (shrubs to trees) and in taxol content

^{1/} Facts from USDA Forest Service, Draft "An Interim Guide to the Conservation and Management of Pacific Yew."

...and Taxol

☐ Taxol belongs to a group of compounds called taxanes; it is one of the most complex taxanes known.



☐ Due to its molecular complexity, total synthesis of taxol has yet to be achieved.

☐ Taxol can be partially synthesized from a precursor, 10-deacetyl baccatin-III, found in needles of *Taxus baccata*, English yew, and from baccatin III, found in virtually all yew species.

☐ Taxol inhibits cell division, and therefore the growth of cancer cells, by preventing microtubule disassembly necessary for completion of cell division. (A microtubule is any of the minute cylindrical structures in cells that are widely distributed in protoplasm and are made up of protein subunits).

What's Next?

- ☐ A summary of "An Interim Guide to the Conservation and Management of Pacific Yew."
- ☐ An update on the inventory.
- ☐ A summary of proposed alternatives for yew collection.

You Can Comment:

We invite you to comment as we prepare the environmental impact statement. How are we doing? Have we summarized the issues fairly? What else should we consider as we develop proposals for yew bark collection?

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

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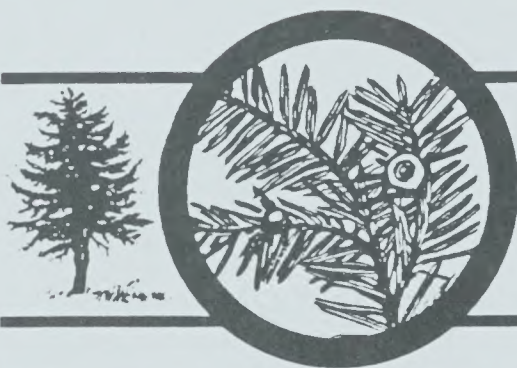
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Third Newsletter

June 1992

June 1992



Pacific Yew

ENVIRONMENTAL IMPACT STATEMENT

"What makes taxol so precious is its promising ability to shrink cancer tumors."

— Michael Unger, Medford Mail Tribune

Thanks Again For Commenting

We appreciate your interest in the Pacific Yew Environmental Impact Statement (EIS) project and thank you for writing to us. This newsletter is the third in a series we will publish during the duration of the EIS project.

More than 800 readers sent us comments in response to the December newsletter regarding the issues we should consider while analyzing yew collection programs for taxol production. We published these issues in the February newsletter.

About 100 people wrote to us in response to the February newsletter. In summary, this is what readers said:

Many readers liked the information in the February newsletter and think we're on track with the issues, with some exceptions from those who feel we've done and are doing a poor job with forests in general.

About 15 readers responded to the issue of whether or not to enter set-asides such as Wilderness Areas and owl Habitat Conservation Areas by saying "no, don't enter these areas." In the words of one reader from Etna, California, *"Such entry, harvest and yew removal would seriously disrupt other major values for these natural ecosystems..."* On the other hand, two readers feel we

should enter any areas where yew trees grow in order to get taxol for research.

Other common comments (5 or more readers agreed) were:

- ☐ Continue to encourage the development of other sources of taxol
- ☐ Protect overall forest health and ecosystems for the future
- ☐ Regenerate yew (work on propagation techniques)
- ☐ Maintain a sustained yield of yew
- ☐ Concentrate on needle and twig harvest rather than bark
- ☐ Utilize as much of the yew tree as possible for taxol

We're Counting Yew — Update on the Inventory



"Get an accurate inventory."

— Comment from a reader in Gilchrist, Oregon.

At this point in time, we have several sources of information we can use to estimate the amount of Pacific yew in Washington, Oregon, Idaho, Montana, and northern California.

For the draft EIS we will use:

The Pacific Northwest Region Yew Inventory: This began in the late summer of 1991 in six national forests in Washington and Oregon. These forests were: Mt. Baker-Snoqualmie, Gifford Pinchot, Mt. Hood, Willamette, Umpqua, and Rogue River.

USDA Forest Service  US Bureau of Land Management 
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The Northern Region Forest Inventory: This tallied Pacific yew in the Northern Region, including northern Idaho and Montana.

Bureau of Land Management (BLM) Inventory: This tallied yew on BLM lands.

The Forest Inventory Analysis: A Forest Service research station inventory that tallied Pacific yew on state and private lands in Oregon, Washington, Idaho, Montana, and California.

Based on Pacific yew inventory information gleaned from these sources, we will estimate the amount of yew available for harvest in each alternative. Knowing the estimated numbers of yew will help us analyze the effects of implementing each alternative. We will show the results in the draft EIS to be published in October 1992.

For the final EIS we will use:
The Pacific Northwest Region Inventory: Crews continue to inventory Pacific yew in seven national forests (now including the Siskiyou).

The Nez Perce Yew Inventory: In the Northern Region yew is being inventoried on the Nez Perce National Forest because it contains a majority of yew in this region.

The Pacific Southwest Region Inventory: A yew inventory of four national forests in northern California will begin this summer.

The BLM Yew Inventory: A yew inventory in districts of western Oregon.

By August all inventory sampling should be completed; then work begins to summarize the data. We will use that data to update the analysis and comparison of

alternatives for the final EIS to be published in March 1993.

Questions You Asked and Some Answers

Q: Will yew be harvested in Wilderness Areas and Natural Research Areas?

A: No. None of the alternatives propose yew harvest in these set-aside areas.

Q: Will yew be harvested in spotted owl HCAs (Habitat Conservation Areas)?

A: We don't know at this time. We will analyze the impacts of harvesting yew in HCAs in two alternatives, E and G, using information from owl biologists. The Regional Forester and BLM State Director will make the final decisions when they choose the alternative to be implemented for their agencies.

Q: How many patients will be treated with taxol in 1992?

A: According to the National Cancer Institute, possibly 8,000 to 10,000 patients may receive taxol treatment in 1992.

Q: What's happening with research into taxol production from other sources?

A: More than thirty different groups are continuing to work on the production of taxol, ranging from the use of biomass collected from nurseries and wild species growing world-wide, to synthesis, semi-synthesis, and cell culture. So far, none are producing commercial amounts, although substantial progress has been made.

So Far, These Are The Alternatives We're Proposing

What follows is a brief description of each alternative.

Alternative A (the No Action alternative)

Harvest areas:

- (1) None

Harvest percentages:

- (1) 0%

Alternative B

Harvest areas:

- (1) Clearcut and shelterwood sale units only

Harvest percentages:

- (1) 100% harvest

Alternative C

Harvest areas:

- (1) Clearcut and shelterwood sale units
- (2) Partial-cut sale units and non-sale areas

Harvest percentages:

- (1) 100% harvest in clearcut and shelterwood sale units
- (2) 25% harvest in partial-cut units and non-sale areas

Alternative D

Harvest areas:

- (1) Clearcut and shelterwood sale units
- (2) Partial-cut sale units and non-sale areas

Harvest percentages:

- (1) 100% harvest in clearcut and shelterwood sale units
- (2) 50% harvest in partial-cut sale units and non-sale areas

Alternative E

Harvest areas:

- (1) Clearcut and shelterwood sale units
- (2) Partial-cut sale units and non-sale areas
- (3) Habitat Conservation Areas (HCAs)

Harvest percentages:

- (1) 100% harvest in clearcut and shelterwood sale units
- (2) 50% harvest in partial-cut units and non-sale areas
- (3) Some harvest in HCAs, to be determined by consultation with owl biologists

Alternative F

Harvest areas:

- (1) Clearcut and shelterwood sale units
- (2) Partial-cut sale units and non-sale areas

Harvest percentages:

- (1) 100% harvest in clearcut and shelterwood sale units
- (2) 75% harvest in partial-cut sale units and non-sale areas

Alternative G

Harvest areas:

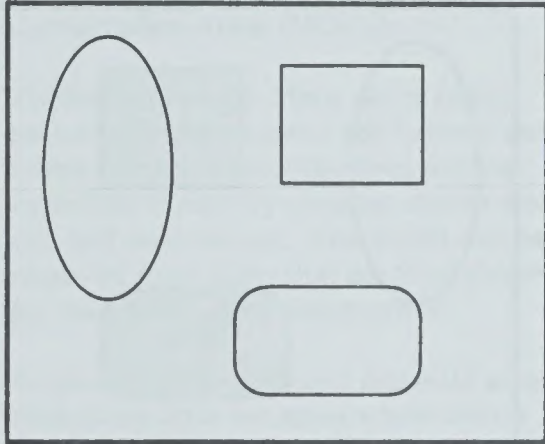
- (1) Clearcut and shelterwood sale units
- (2) Partial-cut sale units and non-sale areas
- (3) HCAs

Harvest percentages:

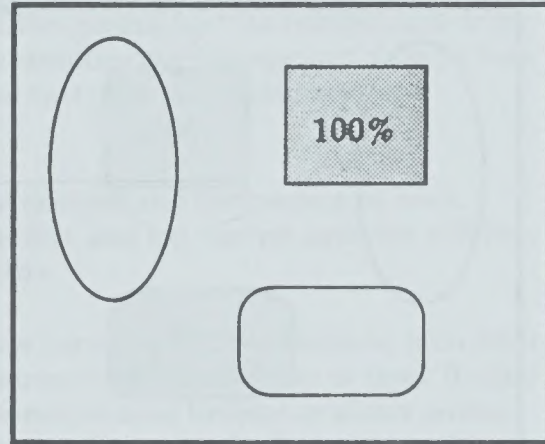
- (1) 100% harvest in clearcut and shelterwood sale units
- (2) 75% harvest in partial-cut sale units and non-sale areas
- (3) Some harvest in HCAs, to be determined by consultation with owl biologists

This is a simplified illustration of the alternatives showing the types of areas where Pacific yew could be harvested and the percent that could be harvested from that area.

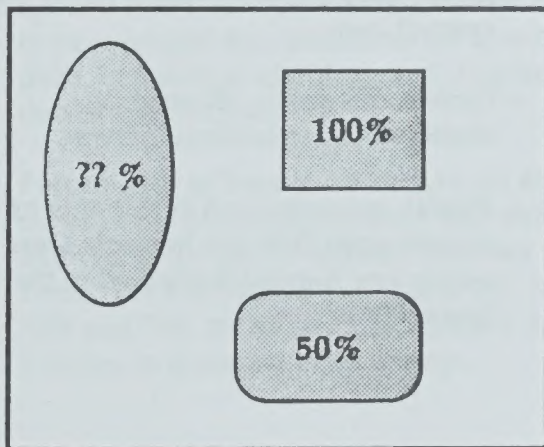
Alternative A:



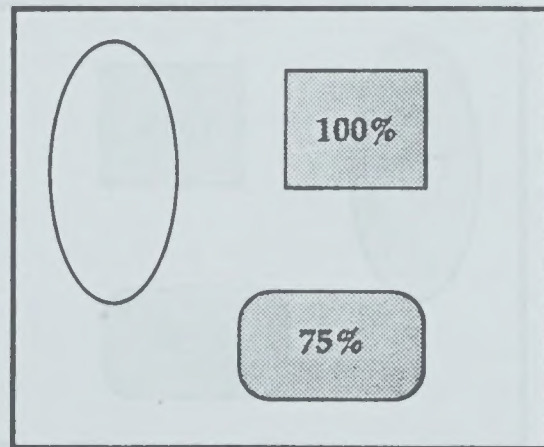
Alternative B:



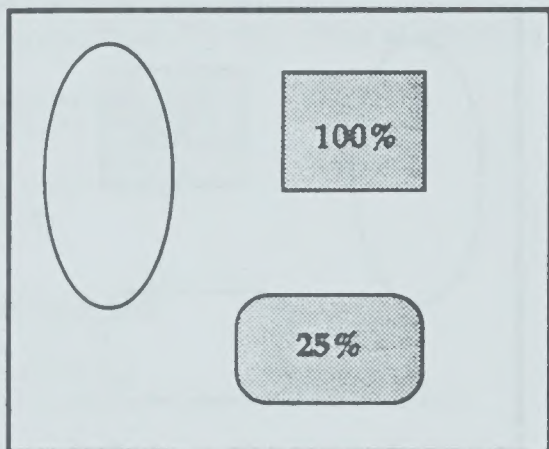
Alternative E:



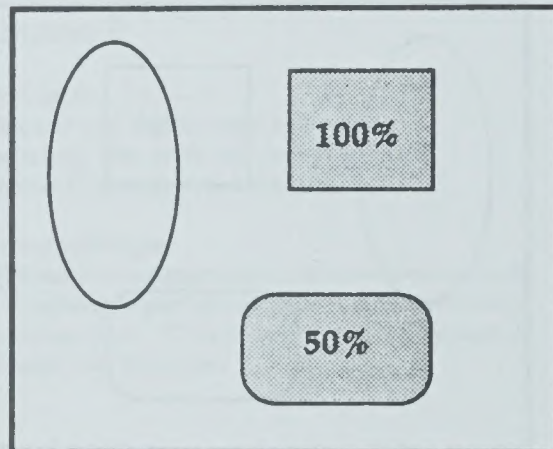
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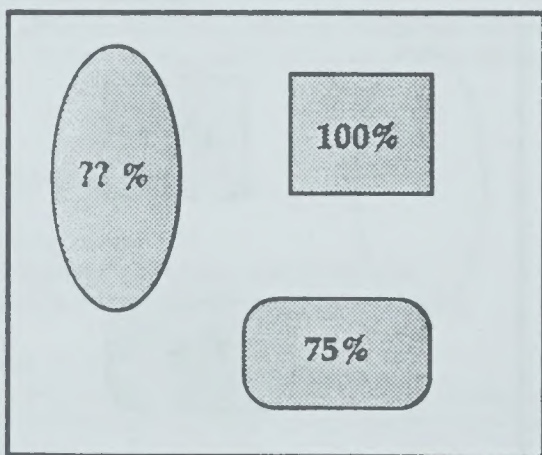
Alternative C:



Alternative D:



Alternative G:



Shading = Pacific yew will be harvested.

Percent = amount of yew that will be harvested



= HCA (Habitat Conservation Area) for spotted owls.



= Timber sale units - clearcut, shelterwood, or seedtree harvest.



= Partial-cut units such as thinning or uneven-aged cuts and non-sale areas where yew harvest is allowed in the Forest Plans.

Differences

Harvest areas: The alternatives differ from each other in terms of areas yew could be harvested from: timber sale units; partial-cut sale units and non-sale areas; or Habitat Conservation Areas (HCA's).

Timber sale units: Here, we're using timber sale unit to mean any harvest unit where the majority of the trees are harvested for timber by clearcut, shelterwood cut, and seedtree cut. Yew could also be removed from areas that are to be cleared for road or building construction.

Partial-cut sale units and non-sale areas: Partial-cut units are areas where only a portion of trees are harvested, such as salvage sales or uneven-aged harvest sales. Non-sale areas are areas where no timber sales have occurred or are planned and where the Forest Plans or BLM guidelines allow for yew harvest.

Habitat Conservation Areas (HCAs): These are areas set aside for the northern spotted owl — contiguous blocks of habitat to be managed and conserved for breeding pairs, connecting corridors, and distribution of spotted owls.

Percentages of harvest: Alternatives also differ in the percentage of yew harvest allowed in the partial-cut and non-sale areas. We will look at removal of 0%, 25%, 50% and 75% of the yew trees greater than 3 inches in diameter at the stump.

Similarities

In all alternatives (except A) you will find the following:

Yew harvest, protection, and regeneration will be guided by *"The Interim Guide to the Conservation and Management of Pacific Yew."* See next page for a summary.

An analysis and comparison of bark, needles, and log harvest amounts will be made.

Yew harvest could be combined with other sources for the production of taxol: If other sources of taxol become available within the next five years, bark harvest could decrease.

Summary—

"The Interim Guide to the Conservation and Management of Pacific Yew"

These guidelines will govern the 1992 harvest of Pacific yew on National Forest lands.*

☐ Harvest no yew if sites of 20 to 100 acres within a local management area of about 20,000 acres do not contain at least 500 mature yew trees.

☐ Establish genetic reserve areas of 20 to 100 acres for every 2,000 foot elevation band in the management area. The reserve areas must contain at least 500 mature yew capable of reproduction.

☐ Harvest no yew within 75 feet of perennial streams.

☐ Incorporate current Port Orford cedar management guidelines where Port Orford cedar is present.

☐ Incorporate current owl management guidelines within 1/4 mile of northern spotted owl nest, outside of Habitat Conservation Areas. No harvest in HCA's except where sales exist.

☐ Consult local game biologist if in deer, elk and moose winter range.

☐ Follow standards and guidelines for management area "21" of the Nez Perce Forest Plan and related information in this "Interim Guide" if in moose winter range on the Nez Perce National Forest.

☐ For clearcut, shelterwood, or seedtree cuts:

Harvest yew with stumps 3" or more in diameter that are not in residual green tree reserve.

Peel to 1" top diameter.

Harvest yew before other species when possible.

Move peeled yew wood to a secure location.

Leave at least 12" high stump with bark intact.

Shade yew stump with slash or adjacent vegetation.

Protect and retain 50% of residual yew stumps, trees, and shrubs.

Regenerate with yew sprouts, cuttings, layers, or seedlings to yew levels before harvest.

☐ For partial-cut sales (thinning, salvage, uneven-age) and non-sale areas for tree form yew.

Leave either 50% of yew trees or 5 yew trees per acre (whichever is greater).

For bark and wood harvest: Leave stumps 12" and shaded; move peeled wood to a secure location; do not cut yew with less than 3" diameter stump; do not reenter stand for yew bark or wood harvest for at least 10 years.

For foliage harvest: Distribute foliage removal evenly through crown; do not harvest foliage from trees less than 1" diameter breast high; reenter stand only after foliage re-growth has occurred and re-harvest foliage from same trees each time;

☐ For partial-cut for shrub form yew:

Leave 50% of yew shrub cover evenly distributed.

For bark and wood harvest: Leave 12" high or long, shaded stumps with bark intact; do not cut shrubs with a stump less than 1" diameter at 12" from the ground; do not reenter stand for bark harvest for at least 10 years.

For foliage harvest: Remove no more than half the foliage, evenly distributed throughout the crown; do not harvest foliage from shrubs with stumps less than 1" in diameter 12" from the ground; do not reenter stand for foliage harvest for at least 5 years.

* The 1992 yew harvest on BLM lands will be guided by "FY'92 Pacific Yew Administrative Policies." See next page for a summary.

The 1992 Pacific Yew Collection Season Is Here

"The production of taxol as a cancer fighting agent continues to be an item of National interest and concern. The Forest Service must make sure that there is an opportunity to utilize as much Pacific yew as possible for the production of taxol." -- F. Dale Robertson, Chief of the Forest Service

"I consider the Pacific yew a top priority for the BLM. Wasting this resource, for any reason, will not be tolerated." -- Cy Jamison, BLM Director

As last season's Pacific yew bark collection progressed, we learned about the process through successes and failures. We continue to find ways to improve. The Chief of the Forest Service, the Pacific Northwest Regional Forester, the Director of Timber Management, and the BLM Oregon State Director have sent letters to the national forest supervisors and BLM district managers with new direction for the Pacific yew harvest. Here is a summary of those directions:

BLM Pacific Yew Strategy Document

BLM will publish a draft Pacific Yew Strategy Document in June, 1992. Copies will be distributed to the public for a 45-day comment period. The draft strategy addresses Pacific yew management on BLM administered lands in Oregon, Washington, Idaho, and California. It responds to Congressional direction in the 1992 Interior Appropriation Act for BLM to "develop a comprehensive strategy document for ensuring a sustainable supply of Pacific yew for the medical community with the least impact to the environment and to the Pacific yew resource." Copies of the draft strategy will be available from BLM offices in Oregon, Washington, northern Idaho and northern California.

BLM 1992 Pacific Yew Administrative Policies

Confines yew harvest to existing timber sales and dead yew trees in certain areas. Places heavy emphasis on pre-peeling bark before commercial timber operations begin. Requires yew surveys of existing and recently expired timber sales. Specifies yew utilization standards and harvesting techniques. Provides

guidelines for yew sale procedures. Emphasizes measures for protecting peeled yew logs from unnecessary burning. Requires strict accountability of harvest including field weighing of bark by BLM representatives. Establishes sale prices for yew products. Provides guidance for making yew resources available to third parties, including traditional users and American Indians. Requires collection of yew data during silvicultural surveys. Directs district managers to take measures for protecting Pacific yew from theft.

Pacific Yew Bark Utilization

To: Forest Supervisors of the Olympic, Mt. Baker-Snoqualmie, Gifford Pinchot, Mt. Hood, Willamette, Umpqua, Rogue River, Siskiyou, Siuslaw, and Umatilla National Forests
From: Regional Forester, Pacific Northwest Region
January 6, 1992

The Forest Service will assume more administrative responsibility for utilization standards, most importantly when burning of the unit is planned in preparation for replanting. District personnel should review each unit after yew collection is completed and call collectors back if collection is not complete. Collectors may have to finish these units before they can enter additional units.

Pacific Yew Fuel Treatments

To: Forest Supervisors of the Pacific Northwest Region
From: Regional Forester
February 11, 1992

Burn units (after harvest and in preparation for replanting) only after yew bark has been utilized and the remaining yew trees and stumps have been protected. Do not burn

slash piles or areas until yew bark is collected. Protect remaining yew, stumps, and new growth from fire by protective measures such as pulling slash away from yew and building fire lines.

Commercial Sales — Pacific Yew

To: Regional Foresters — Pacific Northwest Region, Northern Region, and Pacific Southwest Region
From: Chief of the Forest Service
February 25, 1992

Because of the possibility that taxol may be obtained from Pacific yew heartwood, all commercial sales of Pacific yew trees on national forests will be limited to the purpose of taxol production, with the exception of a small quantity of wood for the traditional production of bows, arrows, and wood-carving products. All Pacific yew wood will be removed from all new timber sales after the bark is removed and transported to a secure location.

Priorities for Spring Yew Harvest

To: Forest Supervisors of the Pacific Northwest Region
From: Director of Timber Management
February 25, 1992

Districts will identify areas that need immediate yew harvest before scheduled burning (in preparation for replanting), or in order to harvest yew in a unit before other tree species are harvested. Districts will identify areas that need reharvest in order to meet utilization standards.

Pacific Yew Fuel Treatments

To: Forest Supervisors of the Pacific Northwest Region
From: Regional Forester
March 9, 1992

Continue to protect yew when burning units in preparation for replanting. Survey burned units to compare survival levels to the preharvest levels. Consider artificial regeneration through seedlings or rooted cuttings; both Wind River and J. Herbert Stone nurseries are

ready to propagate yew for replanting on harvested units.

Pacific Yew

To: All Forest Service employees
From: Chief of Forest Service
March 9, 1992

All employees working in the Pacific yew ecosystems must be aware of the importance of the yew and take appropriate actions to ensure that the resource is effectively used. Develop a personal knowledge of the program and its benefits to society.

Interim Guidance for Harvest and Salvage of Pacific Yew

To: Forest Supervisors—Nez Perce, Clearwater, Idaho Panhandle, Kootenai, Flathead, and Lolo National Forests
From: Regional Forester, Northern Region
March 30, 1992

Directions for managing and making yew available for the national cancer effort include: list first and second priorities for yew bark harvest areas; make every effort to salvage yew bark that could be lost in site preparations and burning; harvest bark prior to logging in all new sales and where possible in existing sales; permit yew wood for taxol only (with few exceptions); salvage yew wood in new sales and where possible in existing sales; and prepare environmental analyses for projects affecting Pacific yew.

Pacific Yew Interim Conservation Guides

To: District Rangers (through Forest Supervisors)
From: Deputy Regional Forester for the Pacific Northwest Region
April 7, 1992

"The Interim Guide to the Conservation and Management of Pacific Yew," developed by a inter-regional, inter-agency technical committee will direct the management of the Pacific yew program during the upcoming peeling season and until the environmental impact statement for Pacific yew is completed.

Please Call Us

If you have issues and concerns you would like to discuss with the team preparing this EIS, please contact Sally or Susan. The team is available to meet with individuals or groups.

Sally Campbell, Forest Service
Pacific Yew EIS Team leader (503) 326-7755
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Susan Whitney, Forest Service
Pacific Yew EIS public involvement specialist
(503) 326-7733
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

The following people can also answer your questions about Pacific yew:

Fred Page, Forest Service Pacific Northwest Region,
yew coordinator, (503) 326-3538

Merrill Davis, Forest Service Northern Region, yew
coordinator, (406) 329-3334

Mike Srago, Forest Service Pacific Southwest
Region, yew coordinator (415) 705-2697

Doug Daoust, Forest Service, interim yew conser-
vation guidelines team leader, (503) 666-0700

Kent Tresidder, Bureau of Land Management,
Oregon/Washington yew program coordinator,
(503) 280-7070

Leslie Robinette, Bureau of Land Management,
public affairs specialist, (503) 280-7031

Mike Ganey, U.S. Food and Drug Administration,
review chemist, (301) 443-3415

What's Next?

- A. Your comments on the alternatives
- B. Inventory update
- C. Next steps in the EIS — moving toward the draft
- D. New news about yews

National Conference on Pacific Yew — Yew're Invited

What: A conference including both general and technical sessions about yew and taxol for natural resource managers, researchers, health professionals, interest groups and citizens.



Where: LaSells Stewart Center, Oregon State University, Corvallis, Oregon.

When: August 3 to 5, 1992

Why: To increase understanding of the issues involved and to promote interaction by participants.

Who: Co-sponsored by the USDI Bureau of Land Management, the USDA Forest Service Pacific Northwest Region, the USDA Forest Service Pacific Northwest Research Station, Oregon State University College of Forestry, and the National Cancer Institute.

For registration information please contact Toni Gwin at Oregon State University College of Forestry, 503/737-2329. Cost is \$75, plus \$10 for a field trip (optional).

USDA Forest Service  US Bureau of Land Management 
U.S. Food and Drug Administration

You Can Comment

We invite you to comment as we prepare the environmental impact statement. How are we doing? Have we offered a fair range of alternatives? What else should we consider as we analyze the proposed alternatives for yew harvest?

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

Official Business
Penalty For Private Use, \$300

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Tape to Close

Fold on This Line

FROM: _____

Place
Postage
Stamp
Here

**USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623**

Appendix A

Public Review of the DEIS

Public Review of the DEIS

The 45-day public review period began when the DEIS was published on January 22, 1993, and ended March 15, 1993.

We received 90 responses in the form of letters or response forms. Of those who responded, 46 commented directly on an alternative. In addition to alternatives proposed by the Forest Service and the Bureau of Land Management, seven individuals proposed either a new alternative or combining alternatives.

Respondents also raised a number of concerns which were addressed in the DEIS.

| Number | Categories of Respondents |
|---------------|----------------------------------|
| 49 | Individual |
| 19 | Interest Group |
| 10 | Business |
| 8 | Other Agency |
| 3 | School |
| 1 | Forest Service |

90 Total

| Number | Geographic Distribution |
|---------------|--------------------------------|
| 40 | Oregon |
| 26 | Washington |
| 15 | California |
| 6 | Other States |
| 2 | Montana |
| 1 | Idaho |

90 Total

| Alternatives | Number of Comments |
|--------------|--------------------|
|--------------|--------------------|

| | |
|---|-----------|
| Alternative A | 2 |
| Alternative B | 15 |
| Alternative C | 7 |
| Alternative D | 8 |
| Alternative F | 1 |
| Alternative G1 | 6 |
| Other Alternatives | 7 |
| <hr style="width: 20%; margin-left: 0;"/> | |
| Total | 46 |

- Protect the Pacific yew tree
- Restate DEIS purpose and need statement, or do a supplemental DEIS
- Continue research on yew, especially propagation
- Provide for sustained yield
- Create a needle harvest alternative
- Establish genetic reserve areas
- Protect the whole ecosystem
- Re-establish Pacific yew in previously harvested areas
- Continue Pacific yew inventory

***Issues and
Concerns***

Appendix A

Public Letters in Response to the DEIS with Replies from the Yew Team

The following are responses to the Pacific Yew Draft Environmental Impact Statement. (No letters were numbered 3, 4, 5, 6, 14, 29, or 30. These numbers were used for training purposes. Letter number 62 was a duplicate letter.)

Each letter is followed directly by the response from the Yew EIS Team.

DOUG HEIKEN / MARILYN HEIKEN
909 W. 10th Avenue
Eugene, OR 97402-5210
(503) 683-1315

January 11, 1993

Dockets Management Branch
Food and Drug Administration
Department of Health and Human Services
Room 4-62
5600 Fishers Lane
Rockville MD 20857

CITIZEN PETITION

The undersigned submit this petition under the Federal Food, Drug, and Cosmetic Act and the National Environmental Policy Act, and 21 CFR § 25, 21 CFR § 314, and 40 CFR § 1500 *et. seq.* to request the Commissioner of Food and Drugs to amend the FDA's December 29, 1992 order approving the New Drug Application submitted by Bristol-Myers Squibb for taxol.

A. Action Requested

We request that you amend the order to include the following condition:

- I. The order dated December 29, 1992 approving the New Drug Application (NDA) submitted by Bristol-Myers Squibb (BMS or the Applicant) for commercial marketing of the new drug taxol shall be conditioned on the preparation of an environmental impact analysis discussing alternative means of obtaining a long-term sustainable supply of taxol.
 - A. The analysis shall focus on alternatives that avoid the lethal harvest of Pacific yew trees (*Taxus brevifolia*) growing in the wild. At least one of the alternatives must focus on deriving taxol from the non-lethal harvest of yew needles, and must describe the environmental benefits of expedited approval of an Investigational New Drug Application (IND) and NDA for taxol from needles.
 - B. The environmental analysis shall be prepared in the form of an Environmental Impact Statement (EIS) and shall be subject to all of the requirements of the National Environmental Policy Act of 1969 and amendments thereto, including opportunities for judicial review.

- C. The environmental analysis shall be prepared and completed before the end of the 1993 harvest season.
- D. The Record of Decision (ROD) shall be informed by the environmental analysis and shall be implemented before the beginning of the 1994 harvest season. If the ROD recommends a phased implementation, all phases of implementation shall be completed before the end of the 1995 harvest season, and if the ROD proposes to end the lethal harvest of yew bark, the harvest of bark shall not be extended past the end of the 1995 harvest season. Subject to the allowances of this Subsection D, BMS may not purchase, contract for, or otherwise encourage or facilitate the harvest of yew bark until all the requirements of Subsections I.A through I.F. of this condition are met. If the ROD is appealed or otherwise challenged, either administratively or legally, yew harvest must be postponed until all claims are settled.
- E. The requirements of Subsections I.A. through I.F. of this condition may be met by complying with the particulars of Subsections I.A. through I.F. of this condition in the context of the EIS currently being prepared by the USDA Forest Service, Pacific Northwest Region.
- F. If the particulars of Subsections I.A. through I.F. of this condition are not substantially met within the required time-frames listed in Subsections I.C and I.D., the FDA shall revoke the NDA for taxol.

NOTE: Except under the narrow circumstances described in the above condition, we are not requesting that the FDA revoke the approval of the New Drug Application for taxol, and we are not seeking to stop the harvest of Pacific yew resources. We support the use of taxol as a cancer therapy. We just want to ensure that these important decisions are informed by detailed environmental impact information.

B. Statement of Grounds

Factual grounds:

1. On December 29, 1992 the FDA approved the New Drug Application (NDA) for taxol submitted by Bristol-Myers Squibb (BMS).
2. Approval of this NDA is a major federal action significantly affecting the quality of the human environment.

3. BMS did not include environmental impact documentation in their NDA application.
4. The FDA did not prepare environmental impact documentation prior to the December 29, 1992 order approving BMS's NDA for taxol.
5. The Draft EIS prepared by the USDA Forest Service, Pacific Northwest Region does not include consideration of any alternatives involving non-lethal harvest of yew needles.
6. Taxol is derived from the bark of the Pacific yew tree (*Taxus brevifolia*). 54 Fed.Reg. 31733 (August 1, 1989).
7. Bark has only been harvested from trees growing in the wild. 54 Fed.Reg. 31733 (August 1, 1989).
8. Stripping of the bark results in the death of the Pacific yew trees. 54 Fed.Reg. 31733 (August 1, 1989).
9. An alternative source of taxol has not been developed. 54 Fed.Reg. 31733 (August 1, 1989).

Legal grounds

10. All FDA actions are subject to environmental consideration. 21 CFR § 25.20(b).
11. The National Environmental Policy Act requires every federal agency to prepare an Environmental Impact Statement (EIS) whenever they propose a major federal action that may significantly affect the quality of the human environment. 42 USC § 4332(2)(C).
12. One of the purposes of NEPA is to inform decision-makers and the public of the environmental impacts of their decisions, *before decisions are made and before actions are taken*. 40 CFR § 1500.1(b). FDA regulations state that environmental information must be available to the public and the decision-maker *before decisions are made*. 21 CFR § 25.1(1)(b)(1). The EIS "shall be used by Federal officials . . . to plan actions and make decisions." 40 CFR § 1502.1. Federal agencies are further prohibited from undertaking any action that would have an adverse environmental impact or would limit the choice of reasonable alternatives until after the agency issues a Record of Decision. 40 CFR § 1506.1(a).

Our proposed amendment to the FDA's order approving taxol is appropriate

because, "[a]gencies shall not commit resources prejudicing selection of alternatives before making a final decision." 40 CFR § 1502.2(f). Our proposed amendment to the order in effect makes the order into a tentative decision until the required NEPA documentation is prepared, at which time a fully-informed final decision can be made.

13. U.S. District Judge John H. Pratt ordered that the FDA "has a non-discretionary duty under the National Environmental Policy Act . . . to interpret and administer acts and regulations under their jurisdiction . . . to ensure that all environmental considerations are taken into account in decision-making by FDA whether or not statutes administered by FDA . . . specifically mandate that those considerations be taken into account." Environmental Defense Fund v. Mathews, 410 F.Supp. 336 (D.D.C. 1976).
14. FDA actions affecting the environment are required to be supported by accurate scientific analysis. 21 CFR § 25.1(1)(b)(2).
15. Federal regulations require that an applicant seeking approval of an NDA for a new drug such as taxol must include an environmental documentation describing, among other things, the natural resource impacts of the new drug. See 21 CFR § 314.50(d)(1)(iii). The FDA should consider the possible long-range impacts of their decisions, because they are required to ensure responsible stewardship of the environment for present *and future* generations. 21 CFR § 25.5(a).
16. The environmental assessment must discuss all reasonable alternatives to the proposed action, particularly alternatives that will enhance the quality of the environment and avoid some or all of the adverse environmental impacts of the proposed action, and the environmental assessment should discuss the environmental benefits and risks of the proposed action and each alternative. 21 CFR § 25.31a(a)(11). The FDA regulations are intended to assist applicants in choosing courses of action that protect and enhance environmental quality. 21 CFR § 25.1(c).
17. The FDA may refuse to accept a New Drug Application if the application fails to include a complete environmental assessment. 21 CFR § 314.101(d)(4).
18. Because the FDA has agreed to participate as a cooperating agency in the Pacific Yew EIS prepared by the USDA Forest Service, the FDA is estopped from denying that approval of the NDA is a "major federal action significantly affecting the quality of the human environment" within the meaning of NEPA.
19. By approving the NDA for taxol before proper environmental impact documentation

was prepared, the FDA violated NEPA (and the relevant implementing regulations of the President's Council on Environmental Quality at 40 CFR §§ 1500-1508, as well as their own regulations implementing NEPA at 21 CFR § 25) which all require that information on the environmental consequences of the proposed action be made available to the decision-maker and the public before decisions are made and before actions are taken. The FDA cannot have made an environmentally informed decision on the NDA for taxol without the benefit of an EIS describing the environmental benefits and risks of a full range of alternatives, including the non-lethal harvest of yew needles.

20. The Pacific Yew EIS prepared by the USDA Forest Service is inadequate on its face because it fails to consider any alternatives within the scope of authority of the Food and Drug Administration. The USFS is required to rigorously explore all reasonable alternatives, including reasonable alternatives not within the jurisdiction of the lead agency, 40 CFR § 1502.14(a),(c), and until the USFS does it right the FDA cannot tier to that EIS. The USFS EIS considers only alternative locations of bark harvest, and alternative safeguards to protect the species. It does not consider any alternative means of obtaining taxol other than from the bark.

The Forest Service says that they can only consider bark, because the FDA has only approved taxol from bark for use on human subjects. This is true; there is not an IND or and NDA for taxol from needles. But the USFS is only passing the buck to the FDA. It's up to the FDA as a cooperating agency in the EIS, to make sure that the Pacific Yew EIS is legally adequate by considering a full range of alternatives, including the non-lethal harvest of yew needles. The FDA is responsible for developing information and preparing environmental analysis concerning portions of the EIS on which the FDA has special expertise. 40 CFR § 1501.6(b)(3). There should be an alternative describing the benefits of expedited approval of an IND and NDA for taxol from needles.

Where there are unresolved conflicts concerning alternative uses of available resources, the necessity of developing and studying alternatives is even more compelling. 42 USC § 4332(2)(E). 40 CFR § 1507.2(d). In the case of the limited yew resource, there is great unresolved conflict over whether taxol is best obtained from the bark, from the needles, or from partial synthesis using needles as a raw material. NEPA requires a detailed statement concerning "the relationship between short-term uses of man's [sic] environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposed action." 42 USC § 4332(2)(C)(iv)-(v). This statutory mandate has particular relevance to the Pacific yew and taxol. It requires that the FDA disclose the long-term risks of killing at an unsustainable

Taxol Petition
11 January 1993
Page-- 6

rate most of the accessible large yew trees of the public forests of the Pacific northwest. If alternatives to getting taxol from bark are not developed and made commercially viable in the very near future we might find that our ill-formed policies have destroyed the only known taxol factories on the planet. For the benefit of the decision-maker and the public, the FDA must disclose these risks in an EIS before taking action that would have an adverse effect on the environment.

C. Environmental Impact

This Citizen Petition seeks compliance with NEPA. It makes no sense to require environmental analysis of a request for environmental analysis. The FDA must justify why they failed to perform an environmental analysis. This petition does not request any action other than that which is already required by law. It is the non-discretionary duty of the agency to comply with NEPA to the fullest extent possible. The FDA cannot avoid their NEPA obligations by setting up a barrier to Citizen Petitions in the form of a prerequisite for environmental analysis of the Citizen Petition itself. Just to point out the absurdity of the environmental analysis requirement as it applies to this Citizen Petition, we have included the following:

ENVIRONMENTAL ASSESSMENT

Date: January 11, 1993

Name of Applicant/Petitioner: Doug Heiken and Marilyn Heiken

Address: 909 W. 10th Avenue, Eugene, Oregon 97402

Description of the proposed action: Petitioners propose that the FDA comply with NEPA by amending the order approving the NDA for taxol, to include a condition requiring the preparation of an EIS that considers a full range of alternatives, including non-lethal harvest of yew needles.

Purpose and need for the action: If we do not petition to enforce NEPA, the yew tree as a species could be jeopardized due to over-exploitation. And if alternative sources of taxol are not considered then, shortages of taxol, an important drug, could arise in the future and threaten human health.

Affected environment: The old-growth forests of the Pacific northwest, including publicly owned forests. These forests are home to many threatened species which may depend on the yew tree for some of their lifecycle needs. Since the decision may affect the long-term supply of taxol for use in cancer therapy, the affected environment also includes human health.

Alternatives considered: We considered the "no-action" alternative-- not submitting this petition.

But the consequences of that action on the environment and public health could be disastrous. Alternative courses of action considered were to file suit in federal court, but that would require more of the resources of all the parties involved. The preferred alternative remains to petition the FDA to comply with NEPA.

Mitigation measures: We are not asking the FDA to revoke their approval of the NDA for taxol except under limited circumstances in which the FDA and BMS fail to prepare and EIS describing a full range of alternatives and implementing the ROD before the beginning of the 1994 harvest season.

Identification of chemical substances that are the subject of the proposed action: Taxol

Introduction of substances into the environment: Ink to write the environmental report.

Fate of emitted substances in the environment: Desk-tops and land-fills. Very little concentrations because the reports will be distributed to commenting agencies and the interested public.

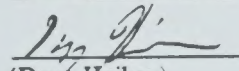
Environmental effects of released substances: Negligible.

Use of resources and energy: The report will consume some paper and ink, but the real effect will be more informed decision-making which could reduce the non-sustainable harvest practices currently allowed by FDA's failure to comply with NEPA before approving the NDA for taxol.

List of preparers: Doug Heiken, Marilyn Heiken.

Certification: The undersigned official certifies that the information presented in this EA is true, accurate, and complete to the best of the knowledge of the undersigned.

Date: 11-Jan-93


(Doug Heiken)

Citizen of the United States of America

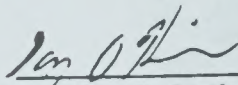
E. Certification

The undersigned certify, that, to the best knowledge and belief of the undersigned, this petition includes all information and views on which the petition relies, and that it

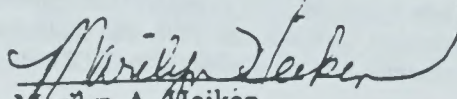
A Public Involvement

Taxol Petition
11 January 1993
Page-- 8

includes representative data and information known to the petitioner which are unfavorable to the petition.



Douglas O. Heiken
909 W. 10th Avenue
Eugene, Oregon 97402-5210
(503) 683-1315 (h)
(503) 686-6678 (w)



Marilyn A. Heiken
909 W. 10th Avenue
Eugene, Oregon 97402-5210
(503) 683-1315 (h)

- c Oregon Natural Resources Council
- Sierra Club Legal Defense Fund
- Native Yew Conservation Council
- Representative Ron Wyden

Please see the answer to Letter #59.



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#2

12193

*Sandra Smith
Cedar Springs
3400 Snow Creek Road
Quilcene, WA 98376*

January 17, 1993

Ms. Sally Campbell
Pacific Yew EIS Team Leader
US Forest Service
333 SW First Ave.
P.O. Box 3623
Portland, OR 97208-3623

Dear Ms. Campbell:

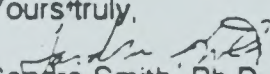
After reviewing the EIS on the Pacific Yew, I have just a few comments:

1. The preferred alternative, G1, seems to be sufficient to maintain adequate harvest while also protecting the environment, if it only lasts the anticipated 5-6 years. If Taxol is not obtained from other sources by that time, then perhaps more limits on harvest will be needed to insure the survival of the tree in its present form. Fairly intensive harvest over a short term appears to not have any more long-term effects than the major fires that swept the areas in times past.

2. I would approve of harvests even in wilderness areas and Owl Habitat Conservation Areas IF they were done by hand. The need for taxol is great right now, and harvesting without mechanical means would avoid noise and hydrocarbon pollution and violation of the wilderness experience for hikers, etc. If horses or other pack means (llamas? mountain bikes?) were used to move bark out of the areas, the disruption to the entire system would be minimized, while a wider area could be used for harvest. I am mindful of the old systems for harvesting cascara bark, back before the chainsaw was invented, and I believe there would be a large number of wilderness-minded people who would be willing and able to efficiently harvest the bark, possibly even cutting bark while preserving viability of the tree, as these people would be more content with smaller harvest amounts, coupled with a reason to live in the wilderness for several months. The harvest actions will more resemble herbivores than the hunting actions of carnivores, so wildlife should be soothed rather than disrupted.

By the way, the paper used in the EIS does not indicate that it was recycled. Why not? These pages don't need to last forever, so why not print on less-than-white paper.

Yours truly,


Sandra Smith, Ph.D.



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Sandra Smith
Cedar Springs
3400 Snow Creek Rd.
Quilceme, WA 98376

Dear Ms. Smith,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who responded to the draft EIS; we appreciate the time and thought.

We carefully considered both your comments about Alternative G1 and your suggestions for hand harvesting in wilderness areas and Owl Habitat Conservation Areas.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

In response to your question about using recycled paper for the DEIS: The paper used in the DEIS is recycled paper. The logo stating that recycled paper was used was not printed on the draft. For the FEIS we will again be using recycled paper and will state that.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#7

12593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? _____
Why or why not? Cole will send this to be added.

I prefer Alternative _____ because: see above

What other comments do you have? ① Look for proof of regeneration in areas selected for new reserves ② 5 TPA or 50% is too scarce for regeneration ③ The DEIS is full of assumptions and so we should be conservative + keep researching, esp. pollen drift + regeneration ④ yew inventory should be ongoing - need more help + more accurate inventories - still finding new areas ⑤ Do something special about the yew on Shellrock creek on the Clackamas RD.

(Please Print)

Name: Cole Gardiner ID# (from label) _____
Organization: Individual - Friend of Clackamas RD
Address: 4800 NE 41st
City: Portland
State/Province: OR Zip Code: 97211
Country: _____

Pacific Yew EIS
Draft

telecom: 4/25/93
Susan/Cole

211193

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? _____

Why or why not? _____

In light of Bristol-Myers Squibb's
that they have other sources of taxol, A.H. B.
is best.

I prefer Alternative _____ because: _____

What other comments do you have? _____

Continue regeneration studies, esp. in
heavy harvest areas. Do away with
"trash tree" attitude. maintain reserves
for five years or until forest plan is
revised.

(Please Print)

Name: Cole Gardiner ID# (from label) _____

Organization: _____

Address: _____

City: _____

State/Province: _____ Zip Code: _____

Country: _____

Pacific Yew EIS
Draft

Susan for Cole Gardiner - telecon



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Cole Gardiner
4800 NE 41st
Portland, OR 97211

Dear Mr. Gardiner,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comment in favor of Alternative B.

As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your concern about yew inventories: Pacific yew is now one of the inventoried species in the region-wide Forest Service vegetation inventory.

In regard to your concern for the Pacific yew trees located along Shellrock Creek on the Clackamas Ranger District: This area is a genetic reserve and is protected.



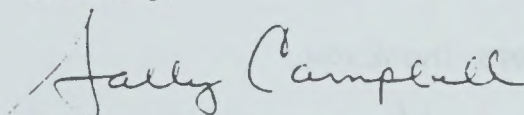
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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#8 12593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by March 15, 1993. Thank you.

Do you agree with the preferred alternative? No
 or why not? Comparison table on pp 5-20/21
Draft EIS. It is acceptable for
second best in my listing scale. See
comments below.

I prefer Alternative D because: It has fewer
negative impacts than either F & G1
which I also find acceptable. It gives
moderate bird production with high protection
of the yew.

What other comments do you have? For me, it is close
between D, F & G1 which I
would arrange in order of priority
from best to least as D, G1 and F.
Of the other I do not like for or reason
or another.

(Please Print)
 Name: Sam Patten ID# (from label) 1763
 Organization: Northern Shenandoah Valley Audubon Society
 Address: RR2A Box 157 199
 City: Boonville
 State/Province: VA Zip Code: 22620
 Country: USA

SAM PATTEN
Conservation Liaison

Pacific Yew EIS
 Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Sam Patten
Conservation Chair
Northern Shenandoah Valley Audubon Society
RR2A Box 67A9
Boyce, VA 22620

Dear Mr. Patten,

Thank you for commenting on the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives D, F, and G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. Also, a variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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You Can Comment

#9

12593

We invite you to comment as we prepare the environmental impact statement. How are we doing? Have we offered a fair range of alternatives? What else should we consider as we analyze the proposed alternatives for yew harvest?

From review, I am once again impacted with how the Forest Service manages to pick one of the worst alternatives as their 'preferred' one. G1

What is so preferred about an alternative which at least will moderately hurt a major ecosystem indicator species, the Spotted Owl? If you hadn't overcut & clear cut everything you could over the last few decades we wouldn't have a yew shortage. Yew hear?

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

Official Business
Penalty For Private Use, \$300

Forward and Address Correction



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Jean DeSpain
87108 Green Ridge
Veneta, OR 97487

Dear Ms. DeSpain,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who responded to the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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You Can Comment:

#10 12593

We are at the beginning stages of the EIS project. We need to know what issues you have regarding the harvest of yew on National Forest and Bureau of Land Management land. What concerns you? What should we address in the EIS? The issues you provide will be used to form and evaluate alternative harvest programs developed in the EIS.

Some old ... Some old ... Some old "preferred" alternative which hicks away at the ecosystem. GI

If you hadn't of clear cut everything you could over the last few decades - we wouldn't be short of yew.

Step up Synthetic research. Save the Forests.
Require Improved National Preventive Health Care.

Do you want to remain on the mailing list?

If you want to continue to receive information about the Pacific Yew EIS, please check the box and return this section.

Yes, I'd like to remain on the mailing list ☒

Name:

Address:

City, State, Zip:

Please print

Jean Despain

87108 Green Ridge

Yonkers OR 97487

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

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Agriculture

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Service

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333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Jean DeSpain
87108 Green Ridge
Veneta, OR 97487

Dear Ms. DeSpain,

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As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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Lawrence M. Jacobson
2628 - 113th Way S.W.
Olympia, WA 98512

#11 12593

January 20, 1993

Thank you for sending me the Pacific Yew ^{DMR} FEIS
to review. It has lots of interesting information.

I recommend that you adopt Alternative
C. It addresses best the immediate need to provide
timber and appears to offer reasonable protection for
the Pacific Yew.

I approve of the concept of not taking all
the trees in a grove, leaving sproutable stumps etc.

The other alternatives seem to use more Yew
than may be desirable. So I would not support them.
I also agree with planting and providing a sustainable
harvest. One way might be to plant as an understory
after thinning operations.

It would also be nice to provide Pacific Yew seedlings
to the public at a reasonable cost. They are pretty trees and
shrubs.

The case of Pacific Yew emphasizes the need to preserve
species and genetic diversity on public lands.

Sincerely,

Lawrence M. Jacobson



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Lawrence M. Jacobson
2628 113th Way SW
Olympia, WA 98512

Dear Mr. Jacobson,

Thank you for your response to the draft Pacific Yew Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative C.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#12 12693

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by March 15, 1993. Thank you.

Do you agree with the preferred alternative? No -

Why or why not? Insufficient evidence provided to support: 1) "low risk" rating for probability of reducing range of yew; 2) "minor & moderate" decrease for impact of yew harvest on yew survival and regeneration following fire; 3) "minor increase" in change in incidence of pests on Pacific yew. I'm very concerned about: 1) yew survival in clearcut or shelterwood cut units; 2) yew survival in broadcast burned units and 3) harvest of *Phytophthora lateralis*.
I prefer Alternative _____ because:

I need more information before I can support an alternative. I found it difficult to really "see" how alternatives are different. Your illustrations for the alternatives are good but they seem somewhat abstract in relation to really seeing differences. Perhaps some bar charts showing all alternatives together would help us see differences.
What other comments do you have? along with your other comments

English and metric units are not consistently used. I suggest using English units with metric units in parentheses. Also, I know MM = million but are you referring to MMBF or MM pound units are not consistently used especially in Longoria's of Effort Table. Also, does your ID team really have 22 people or main team? Who is team leader?

Please Print)
Name: Dr. Douglas D. Piirto ID# (from label) 4483
Organization: NRM Dept., Cal Poly
Address: _____
City: San Luis Obispo
State/Province: Ca Zip Code: 93407
Country: USA

Thank you for giving me this opportunity to review DEIS. I learned a lot about Pacific Yew Draft Pacific Yew EIS Draft



United States
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Service

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Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Dr. Douglas D. Piirto
NRM Dept., Cal. Poly
San Luis Obispo, CA 93407

Dear Dr. Piirto,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the the draft EIS; we appreciate the time and thought.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We appreciate your suggestions about how we can make the final EIS more readable, especially regarding the unit measurements and charts. We will be making the English and metric units more consistent; however, adding bar charts to the diagrams already in the document would add to the complexity of the EIS.

In response to your comments on the incidence of pests and the spread of Phytophthora lateralis on Pacific yew: It is our opinion that none of the alternatives proposing harvest of yew at any level would lead to any increase in the impacts of pests on the remaining trees. We base this analysis on the documented lack of serious pests to yew plus years of professional experience on the effects of harvest activities on different tree species. We know of no new information that would lead us to predict any increase of pest activity. (See DEIS, pages III-33 and IV-48, 49.)

The risk and potential of the spread of Phytophthora lateralis because of harvesting yew is no more or less than that posed by any other activity within the range of Port-Orford-cedar that involves using roads. This risk has and will continue to be evaluated on a project-by-project basis. We stated, and still believe, that Pacific yew is not a major host of the fungus and that harvesting yew under the guidance of the Forest Service Port-Orford-cedar management plan does not increase the risk of spreading this disease. (See Appendix C.)

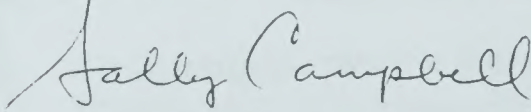


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Again, thank you for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#13 12793

Beth A. Nelson
4335 Deming Road
Everson, WA 98247

Susan Whitney, Forest Service
Pacific Yew EIS public involvement specialist
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Dear Ms. Whitney:

I submit this comment letter regarding the Pacific Yew Draft Environmental Impact Statement, issued January of this year by U.S.D.A. Forest Service. I am a Huxley college graduate with a B.S. in Environmental Policy and Assessment. I am writing also from the perspective of a public user of national forests and wilderness areas. I believe that my view is also shared by many others, including the plant communities and wildlife which inhabit the Pacific northwest region. When I visit a national forest or wilderness area, I seek the pure, clean solitude of a vast, unbroken expanse of forest, unmarred by clearcuts and roads. As 95% of the continental United States forests have been cut, the 5% which remain are vital to the genetic viability of the greater Pacific northwest temperate forest ecosystem. As discussed, the Pacific yew occurs naturally in ancient temperate forest ecosystems. Most of these forests were logged off long ago. In the case of taxol and the Pacific yew, it is imperative that the harvest management alternative chosen affords the highest degree of protection, a level which does not threaten the long-term viability of their natural reproduction, and which emphasizes research for the cultivation of yew to supply long-term demands. I strongly disagree with the preferred alternative chosen by the U.S.D.A. Forest Service and the Bureau of Land Management which emphasizes "Moderate to high bark production" with "moderate protection of the Pacific yew and the ecosystem in yew harvest areas". Although the importance of providing an effective cure for cancer is imperative, it must not over-shadow the necessity of preserving intact the last remaining pockets of wilderness in our region. Emphasis should be instead on finding a way to successfully cultivate the Pacific yew on lands which have already been logged and preserve those found growing wild for gene pool reserve and genetic variability.

Yours Truly,

Beth A. Nelson

Beth A. Nelson



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Beth A. Nelson
4335 Deming Rd
Everson, WA 98247

Dear Ms. Nelson,

Thank you for your response to the draft Pacific Yew Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

In response to your comment on the importance of preserving gene pools: The genetic reserve system is designed to maintain genetic variability of the yew in a natural state. While yew is found in northwest ancient forests, it is also found in many second growth stands as well. Further protection is afforded by riparian corridors, administratively withdrawn areas and the resprouting characteristics of the species.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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JANUARY 20TH, 1993

RECEIVED

JAN 25 1993

PLAN/ER

TO: JOHN LOWE
REGIONAL FORESTER
333 SW FIRST AVENUE
P.O. BOX 3623
PORTLAND, OR.
97208-3623

#15 12793

DEAR SIR:

THANK YOU FOR SENDING THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND APPENDICES ON THE PACIFIC YEW. I RECEIVED MY COPY ON JANUARY 19TH, 1993.

I NOTE THAT THE PUBLIC OR INTERESTED PARTY COMMENT MUST BE SENT TO YOU BY MARCH 15TH, 1993. I WOULD LIKE TO RESPECTFULLY REQUEST A ONE MONTH EXTENSION OF THIS COMMENT PERIOD. GIVEN THE COMPLEXITY OF THE ISSUE, THE LARGE AMOUNT OF MATERIAL TO REVIEW, THE LONG TERM (100+ YEAR) ENVIRONMENTAL IMPACT OF THE ALTERNATIVES, AND THE FACT THAT INTERESTED PERSONS RECEIVE INFORMATION THROUGH BI-MONTHLY PUBLICATIONS, I BELIEVE THAT THE PRESENT COMMENT PERIOD OF LESS THAN TWO MONTHS IS INADEQUATE.

I WOULD LIKE TO THANK YOU AND YOUR STAFF FOR THE IMPORTANT WORK YOU HAVE DONE, AND I HOPE TO HEAR FROM YOU AS SOON AS POSSIBLE REGARDING THE COMMENT PERIOD EXTENSION.

MR JOHN MILLS
10475 VINELAND RD.
BEN LOMOND, CA
95005

SINCERELY;

John Mills 5678 YEW



Please see the answer to Letter #34



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#16 12893

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? Yes

Why or why not? best balance of human needs and
Yew protection

I prefer Alternative _____ because: _____

What other comments do you have? ^① very well written and
remarkably complete. ^② On all physiographic maps nos. 11
and 12 should be switched. ^③ "Blue Mountain" should be
Blue Mountains throughout text. ^④ Pollen dispersal is a
critical unknown to determine "connectivity" required for
seed formation; that is, research on effective pollination
distance is critical for decision making on Yew harvesting.

(Please Print)

Name: Dr. Lanny H. Fisk ID# (from label) _____

Organization: F & F GeoResource Associates, Inc.

Address: 166928 West Highway 20

City: Bend

State/Province: OR Zip Code: 97701

Country: U.S.A.

Lanny H. Fisk, PhD

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Dr. Lanny H. Fisk
F & F GeoResource Assoc., Inc.
66928 W. Hwy 20
Bend, OR 97701

Dear Dr. Fisk,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments about Alternative G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Thank you for pointing out corrections to the physiographic maps. We made the corrections.

In response to your comment that research on pollen dispersal is critical to make a decision on harvesting yew: There is very little known about the pollination biology of Pacific yew, although some research has been done for Canada yew by Dr. Taber Allison of Harvard University. Data on pollination in Canada yew cannot be directly applied to Pacific yew (although some inferences can be drawn) for two primary reasons: 1) Canada yew is a much shorter species, the average maximum height is only 1 meter, and therefore probably has much smaller pollen dispersal distances, and 2) Pacific yew is dioecious, having both male and female trees, while Canada yew is monoecious. Dr. Allison has found a strong relationship between pollen production and plant spacing, and pollination success and seed set in Canada yew.



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Pollen dispersal distances depend on three major factors: 1) Size and density of pollen grains - the average grain size for the genus Taxus is approximately 25 um in diameter; 2) the height of pollen release, and 3) wind velocity at the time of release. The understory environment in which yew grows may also restrict pollen dispersal.

Pacific yew has been found to have approximately a 1:1 sex ratio. Although yew harvest will not be planned according to sex, it is believed that by harvesting only a proportion of the trees on a per acre basis, that the natural sex ratio within populations will be maintained across the landscape.

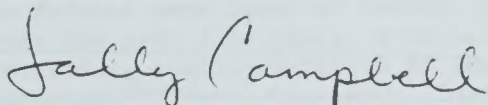
Any areas with unusual sex ratios, i.e., large areas of nearly pure female or pure male stands would be considered on a site-specific basis.

The likelihood of reduced pollen availability affecting sexual reproduction increases as greater proportions of yew populations are removed. The effects of different harvest levels on reproduction are assessed in the Biology section of the EIS. Yew also reproduces vegetatively. It is unknown how large of a role seedling production plays across the landscape, and how a reduction in seed production would effect this. This is discussed in more detail in the Chapter IV Biology section.

Yews growing in the more open environment along streams may be a significant pollen source for individuals growing in understory habitats. Pacific yew will not be harvested along riparian areas, retaining this pollen source throughout the landscape.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#17 20393

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? _____

Why or why not? yes - But -

keep 6 TPA as per interim guide

Regenerate year

I prefer Alternative _____ because: _____

What other comments do you have? _____

I would like to see all parts of your utilities even
as possible.

Stay out of OCHs as much as possible
would it be nice when suitable synthetic taroal can be
found?

Protect ecosystem and wildlife

(Please Print)

Name: Lola Landis ID# (from label) 1400

Organization: _____

Address: B. 892

City: Waldport

State/Province: OR Zip Code: 97344

Country: Lincoln

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Lola L. Landis
Box 892
Waldport, OR 97394-0892

Dear Ms. Landis,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#18 20393

You Can Comment:

We are at the beginning stages of the EIS project. We need to know what issues you have regarding the harvest of yew on National Forest and Bureau of Land Management land. What concerns you? What should we address in the EIS? The issues you provide will be used to form and evaluate alternative harvest programs developed in the EIS.

Dear Friends -

You have done an excellent job of presenting the Pacific yew/taxol issue. You have worked hard and it pays off.

You no doubt have received many negative comments, but keep up the good work.

I, too, will be glad when a synthetic taxol can be found so we can save our yew trees.

Keep up the good work.

Do you want to remain on the mailing list?

If you want to continue to receive information about the Pacific Yew EIS, please check the box and return this section.

Yes, I'd like to remain on the mailing list



Please print

Name: Lola L Harris

Address: BX 892

City, State, Zip: Waldport Or 97394

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

Official Business
Penalty For Private Use, \$300



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-1623

Reply To: 1950

Date:

Lola L. Landis
Box 892
Waldport, OR 97394-0892

Dear Ms. Landis,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#19 20393

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? No!

Why or why not? It does not seem to manage Pacific Yew on a sustainable basis. It does not recognize the current lack of knowledge about Pacific Yew nor outline procedures to increase our knowledge. It appears based up maintaining the current outlook on Pacific Yew, managing the yew on short term objectives with very strong tendencies toward either eradication from commercial timber areas or at the very best maintaining extremely low reproduction.

I prefer Alternative D because: It allows us to manage the Pacific Yew on a more sustainable basis. It provides a moderate supply of taxol, yet giving us time to find answers to our lack of current knowledge about Pacific Yew reproduction & ecosystem preferences. It provides a more long range objective in Pacific Yew management.

What other comments do you have? This study, so far, seems designed to assure the status quo. On our public lands all species should be inventoried and management be aimed at sustainable management of each specie. Recognize our lack of knowledge and fill those gaps rather than ignoring our lack of knowledge. To me, this study causes me shame as a professional output of my land management agencies.

(Please Print)

Name: FRED L. HENLEY ID# (from label) 2713

Organization: PRIVATE CONSULTANT

Address: P.O. BOX 2262

City: FRIDAY HARBOR

State/Province: WA Zip Code: 98250

Country: _____

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Fred L. Henley
PO Box 2262
Friday Harbor, WA 98250

Dear Mr. Henley,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments about Alternatives G1 and D.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comment that "on our public lands all species should be inventoried and management be aimed at sustainable management of each species:" This will occur as the Forest Service and BLM shift to ecosystem management and look at the range of conditions that will allow for biodiversity and sustainability of species.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#20 20393

January 28, 1993

Sally Campbell, Pacific Yew EIS Team Leader
USDA Forest Service, Pacific Northwest Region
333 SW First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Subject: Pacific Yew, comments on draft EIS

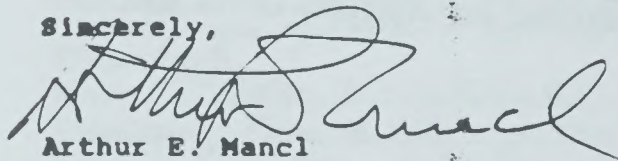
Thank you for the opportunity to comment on the draft EIS. However, it should be noted that I looked for the RESPONSE FORM that was supposed to be the page following 8-34 and failed to find it. Also there was no cover letter accompanying the two volumes which I recieved, so this reply is in my own form. If replies must be in the RESPONSE FORM format please send a copy to me and I will resubmit my response.

It seems there are some important considerations upon which the choice of Alternatives should be made.

1. The Pacific Yew tree appears to have considerable value beyond treating ovarian cancer, which indicates that we should not "use up" the resource.
2. Since the Pacific Yew is a slow growing tree, the stock needs to be treated with care.
3. The Pacific Yew has as unique biochemistry that is likely to play a unique role in the forest, a subject about which little is know at present.

While it would be possible to expand the list of arguments, I believe these are sufficient indicators for making a choice. It is acknowledged that there is considerable need for the resource and an expectation that it be made available. With these considerations it seems that ALTERNATIVE D is an appropriate choice providing a moderate amount of bark while other, possibly synthetic, sources are sought. It is very important that the choice provides a high degree of protection of the Pacific Yew and the ecosystem in the yew harvest areas.

Sincerely,



Arthur E. Mancil
1770 E. 26th Ave
Eugene, OR 97403



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Arthur E. Mancl
1770 E. 26th Ave
Eugene, OR 97403

Dear Mr. Mancl,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We apologize for misplacing the response form in the draft EIS document. It was located on the last page of the draft and a separately bound summary.

We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments regarding Alternative D and your concern for protection of the species and the ecosystem.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#21 20393

"THE NORTHWEST YEW TREE"

Written By:

Don Yarnell
Rt 1 Box 11
Underwood, Wa. 98651
(509)493-1855

Deanna Murphy
26 Howell Road
White Salmon, Wa. 98672
(509)493-2044

Late in the summer of 1991, after the taxol report came out, we were discussing the yew tree, the limited supply, and the devastation ravaged on the trees by poachers of the bark.

By the research that has been done, it is assumed that the yew tree is more plentiful than it was first thought on the east side of the Cascade Mountains and along the great Columbia River and its tributaries.

Along smaller rivers and streams running from the great mountains of the Northwest, such as Mt. Hood, Mt. Adams, Mt. St. Helens and Mt. Rainier to the Columbia River, all have the yew tree scattered along their banks and through the foot hills between them.

Due to the greater amount of moisture within the area, the yew tree grows more plentiful and quite scraggly on the west of the of the Cascade range.

The yew has many characteristics uniquely of its own. In the eastern areas of the Cascades, the tree grows more like a big bushy

shrub than a tree. On the western side, the tree grows taller and larger in diameter, even though it is still quite scrubby.

It is now January and in all my 78 short years, I have never seen growth take place so early in the year, with the exception of the Madrone and the tan oak which also start their growth cycle during the winter months.

These two species are well known in northern California and the southern Oregon coast areas. The yew is grown from northern California to the Canadian boarder.

In the last year we have found and tagged a number of trees in different areas so that the growth cycle can be logged.

Some trees growing in and near water have had a lot more seed pods than trees growing in the open and dryer places. The open space trees ripen one or two weeks earlier than the wet land trees.

We now have propagated cutting and planted the yew seeds. Some of the cuttings have rooted but no seeds have sprouted at this time.

While collecting cuttings, there was found to be two different trees. One tree is a pollinizing, or male tree, while the other one a seed bearing, or female tree. The pollinizer has many little bead like growths along the underside of limbs outer ends on one

and two year old growth. These little bead like growths develop into tiny pinkish blossoms along in May through July and they dry up and fall off.

While the seed bearing tree, the female, starts with a tiny green node about 1/8 inch long spaced from one or two inches apart on the one and two year old wood on the outer underside of the limb. They develop into seed pods, in the shape of an acorn, with a little dark green cap. At maturity, the cap will form a berry like jacket around the seed. Gradually, as the growth process continues, the jacket fills with a sugar sweet liquid and turns from a dark green to a dull orange color. At full maturity, ripeness, it becomes a dark red berry. In our travels, we find it takes from 72 to 96 hours for the seed to ripen after it reaches the dull orange stage. This time lapse is also determined by the different altitudes and temperatures of the areas.

At maturity the seed slips out of the jacket and falls to the ground to grow or be eaten by mice and squirrels. Birds also eat the little red morsels and drop the seeds here and there to take root and grow more yew trees. There are a great many ants on and around the yew to get their share of the sweet nectar of the ripe pods that have given up their seeds.

The new seedlings seem to do best around the base area of the large willow tree where the humus is more evident than most other places of the forest.

Trees from different areas have several odd shaped seeds. Some have a three cornered tip, some have three points, some have two points, and last but not least, some are round at the top of the seed.

The needles of the yew seem to be quite palatable to browse eating animals like deer and farm livestock. The deer especially like to trim all the new growth they can reach. A small tree when found will be eaten clear to the ground of its new growth. Where farm livestock and wild deer roam in the forest, most of the yew trees you find will be trimmed of their new growth as high as the animals can reach all around the tree.

We started our quest of gathering seeds about the first week in June. The seeds ripen until September and October. When they start to ripen, you usually get from four or five or, maybe thirty to forty, seeds from a good bearing tree. About every three or four days, you can pick again with variations in the time for the seeds to ripen.

We have picked ripe berries from a tree growing right out in an open area by a big oak tree on a daily basis and watched the continuing rotation of the ripening process.

Some berries would get about half way mature, turn brown and fall to the ground. While others, would develop nicely to be picked from the same tree.

In another case, we found a tree growing in a very dark shaded area that had a thousand or more seed pods. This tree did not mature until late September. Then it suddenly all ripened and in about ten days went from green to red and picked.

The berries found near water or damp places grow a much larger berry over the seed than in dryer areas. However, the seed itself is the same size.

The young yew trees look a lot like the white fir in structure. They both have short flat needles and similar colored bark on the smaller trees. The new growth on the yew has a greenish hue color on the top and bottom of its needles. The white fir has a shiny yellowish green color on the top side of the new growth, while the under side is a light blue.

Along about May or June the yew bark peelers will be going forth into the woods and forest to harvest the bark. We truly believe that each and every person that attempts to gather yew bark should be required to know the difference between a male and a female tree. Otherwise, the persons doing the work will be cutting too many female trees. As we know, the female is the seed bearing tree. Therefore, the male is only to pollinize the seed tree. For that reason, the male tree can be thinned more extensively. By harvesting the female tree too heavily, it will jeopardize the reproduction of the species.

The male tree should not be taken more extensively than one well developed male to three to five female trees in a group, to be sure of pollinization for a good seed crop for the season.

We have in the past found female trees up to a quarter of a mile apart that did not produce any seeds. Although it was evident that the seed ^{Node}~~node~~ had come forth but did not materialize for want of pollinization, therefore, that tree could be taken for bark without harm to the species, so read the trees before cutting for harvest.

If given the chance the yew tree, like the mighty oak, will make a regrowth from the roots even if there are no spur buds below the cut off point. It is a very hardy, slow growing tree. All it needs is a little thought and care to assure the trees future existence.

We are very interested in the reproduction and protection of the yew tree, so that it will serve us forever.



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333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Don Yarnell and Deanna Murphy
Rt. 1 Box 11
Underwood, WA 98651

Dear Mr. Yarnell and Ms. Murphy,

Thank you for sharing your observations concerning Pacific yew. Much needs to be learned about the species and how it functions in the ecosystems of which it is a part. We will pass your observations along to such people as Charles Bolsinger and Stanley Scher, who have a continuing research interest in the ecological relationships of Pacific yew.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies for individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

cc: Charles Bolsinger, PNW Forest and Range Experiment Station
Stanley Scher, Bioresources Research Center



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#22 20493

DOUGLAS O. HEIKEN
909 W. 10th Avenue
Eugene, Oregon 97402-5210
(503) 683-1315

2 February 1993

Sally Campbell, TM-NEIS
Pacific Yew EIS Team Leader
USDA Forest Service
333 S.W. 1st Avenue
Portland, OR 97208

Subject: Need for Supplemental Draft EIS on Pacific yew and taxol.

Dear Sally:

Thanks for coming to the Native Yew Conservation Council meeting in Portland last weekend and thanks for bringing your team and all your collective ears for hearing comments on the DEIS. Even though I may disagree with the range of alternatives and the choice of a preferred alternative, I must say I enjoyed reading the DEIS, so to that extent you have done a good job.

Now comes the startling news from Bristol-Myers Squibb (BMS) that they will not require any yew bark from federal lands in 1993. This recent announcement undercuts the underlying purpose and need to which the USFS and the BLM are responding in the proposed action. 40 CFR §1502.13. The vast majority of world demand for bark comes directly from Bristol-Myers Squibb. If BMS does not need bark from federal lands in 1993, then the need to which the Forest Service is responding has substantially evaporated. Granted, there may be other parties interested in obtaining yew bark and/or needles and twigs, but none of these parties has an NDA allowing them to sell pharmaceutical taxol on the open market, and none of these parties even has an Investigational New Drug application allowing use of taxol in clinical trials. In other words, there's no rush to meet the demand for bark because no one can legally use it, at least not on humans. Therefore, the EIS team needs to step back and rethink the underlying purpose and need for the proposed action. My hope is that the USFS and BLM can scale back their harvest program and stay within timber sale units.

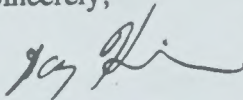
Also, since BMS has announced alternatives that may come on line in the near future (possibly including yew needles from the Pacific Northwest or elsewhere) the range of alternatives should be expanded. These alternatives point out that the need is for taxol, not for yew bark, therefore the alternatives should explore alternative ways of obtaining taxol from federal lands, not just alternative ways of obtaining yew bark.

Finally, the CEQ regulations require that a Supplemental Draft EIS be prepared in this situation because significant new circumstances or new information relevant to environmental concerns and bearing on the proposed action or its impacts have arisen. 40 CFR §1502.9(c).

Sally Campbell
2 February 1993
Page-- 2

If you have any questions please feel free to call me at (503) 683-1315 or 686-6678.

Sincerely,



Doug Heiken

c: NYCC
ONRC
Neil Kagan
Rep. Ron Wyden



Please see the answer to letter #59.

[Faint, mostly illegible text body consisting of several paragraphs]



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Native Yew Conservation Council
Ninth Public Meeting, January 30, 1993
Portland, Oregon

#23 20593

Statements by Individuals

1. Jim Eblin, law student, Lewis and Clark Law School

Jim began with "hortatory comments:" Good job, team assembled much information, he actually enjoyed reading the document. Bristol-Myers Squibb is gone now, but may find it expedient to return to bark harvest on federal lands, so, finish the EIS. Given the changed climate, consider a sustained-yield. "Don't eat the seed corn." Be specific about the number of years this EIS covers. Include "ought to be" statements, the team's assessment of what ought to happen, with upper and lower limits to harvest.

2. Dave Pilz, NYCC President

The range of alternatives doesn't include a "needles-only" harvest. This document is meant to analyze alternatives. Now is an ideal opportunity to decide to use only needles. The New Drug Application can be, and probably will be, amended to approve needles.

Stanley Scher added a comment supporting a needles-only alternative -- all alternatives only referred to bark. No talk about alternative taxol sources -- tissue culture, semi-synthesis, etc.

3. Doug Heiken, law student, University of Oregon

The purpose and need of the EIS may have changed and therefore, alternatives may change. The sustained-yield, uneven-flow doesn't seem to fit the idea of a sustained yield act. Elaborate on the risks of an uneven-flow. The demand for taxol was based on the processing capacity, but should be based on human health needs. Needles are mentioned as a by-product; address as a primary product.

4. Jackie Dole, NYCC board member

Page IV-110 #5 -- what is required to keep yew in the forest, sustained yield? Jackie reported her conversations with two timber industry contacts: they get calls from people who want to harvest yew; they want compensation for time delays in timber sales due to yew harvest -- fear of loggers being caught between timber harvest and yew harvest.

Page IV-112. Roadless areas -- consider watershed, rivers, and fish habitat.

Page IV-118. Effects are the same for Alternatives C-G2. Please reevaluate.

County governments could get returns if FS charges for yew bark.

Page IV-122. Clarify paragraph concerning yew, people, hunters -- "Recreation Expenditures."

Social and economic concerns -- where did the opinion come from that the effects on women and minorities is high/positive? A drug is not necessarily a positive development.

5. Chuck Edson, NYCC member, Klamath Falls

With the new announcement from BMS, what about yew trees in timber sales? It would be a shame to waste bark. Ask BMS to use it. Or perhaps somebody else could use it.

6. Amanda Wilcox, collector

Bristol-Myers Squibb is not the only one out there. Consider other aspects of the yew tree rather than bark only. Consider yew material needed for more research. Provide more information and interpretation on legalities of bark collection.

7. Dick Wilcox, collector, formerly with Mason, Bruce, and Girard

Problem outside timber sales units in the retention of TPA will cause legal problems; difficult for harvester and inspector. Yew harvest needs to be cost-effective. Yew was generally wasted before it became a valuable species. The EIS guidelines are not specific enough for the harvest to be cost-effective. Drawing boundaries around acres is very difficult -- not that many people are competent to do this. We need broader guidelines.



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333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

David Pilz, President
Native Yew Conservation Council
PO Box 2238
Corvallis, OR 97339

Dear Mr. Pilz and NYCC Members,

This letter is in response to the comments, suggestions, and input we recorded at the NYCC's ninth public meeting held on January 30, 1993, in Portland, Oregon.

We thank Jim Eblin for his hortatory comments. In light of the changed circumstances, we have identified Alternative B as the preferred alternative in the FEIS. This alternative allows yew harvest only in timber sale units. We did consider a "Long-Term Even-Flow Harvest" alternative, but did not carry out a full analysis for reasons documented on page II-13 of the FEIS. We also have revised our discussion of sustained yield in the FEIS (see pages IV-7, 8 in the FEIS). The number of years (five) covered by this EIS is stated on pages I-2 and I-5.

In response to your comment, Mr. Pilz, that "the range of alternatives doesn't include a 'needles-only' harvest": We added a needles-only alternative to consider, but did not carry out a full analysis for various reasons documented on pages II-13, 14 of the FEIS.

Stanley Scher commented that all of the references to taxol in the draft refer only to yew bark; that there is no discussion of alternative taxol sources, such as tissue culture, semi-synthesis, etc. We have corrected our omission of needle harvest in several locations throughout the FEIS (see especially the Description of Alternatives, pages II-19 to II-38 in the FEIS). A discussion of various alternative methods of taxol production can be found on pages III-103, 104 of the final EIS; we added information about the possible production of taxol from a fungus found on yew. The development of alternative sources of taxol is beyond the scope of this EIS, which is limited to analyzing the effects of federal Pacific yew harvest for taxol.

NYCC board member Jackie Dole commented that the paragraph on page IV-122 of the draft that discusses "recreation expenditures" should be clarified. We inserted the following sentence: "Especially where bark is harvested outside timber sale areas the loss of yew trees or shrubs may diminish the visual quality of the recreational setting and possibly the quality of the wildlife habitat."



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In response to the comment by Doug Heiken that "Because of Bristol-Myers Squibb's announcement that they don't need federal bark, the proposed action and purpose and need of the DEIS has substantially changed and therefore the alternatives may change.": We find the original proposed action and purpose and need still applicable. We have clarified the proposed action and purpose and need to reflect the current situation, but the changes made for clarification are minor (see pages I-2 to I-5 in the FEIS). We did not add any new alternatives; the range of alternatives is still reasonable within the scope of the proposed action. Mr. Heiken also commented that the demand for taxol was based on processing capacity but should be based on human health needs. The need for our proposed action is the need for Pacific yew (for taxol production), rather than the need for taxol (see page I-2 in the FEIS). We have changed the demand description in the FEIS due to the change in demand for federal yew from Bristol-Myers Squibb and the uncertain future demand. (See pages I-5 and III-98 in the FEIS.)

Jackie Dole had several additional comments and questions:

What is required to keep yew in the forest and provide for sustained yield? (DEIS page IV-110, #5.): In response to several inquiries, we have revised our discussion on sustained yield. (See page III-7 in the FEIS.)

Consider the economics of yew harvest from the harvester's point of view, and returns to counties if the Forest Service charges for yew bark: We have clarified the economics section of Table II-1 and the economics discussion on page IV-108. We are making yew bark available to qualified buyers at fair-market value and there will be a small return to the counties based on yew sales. (See Chapter IV of the FEIS.)

Consider watersheds, rivers, and fish habitat in the discussion of effects in roadless areas. We did not change the Roadless Area discussion; effects on the above resources can be found in the section on Water Resources and Aquatic Habitat. (See page IV-79 of the FEIS.)

Clarify the paragraph concerning yew, people, and hunters in the "Recreation Expenditures." We rewrote this paragraph; see page IV-116 of the FEIS.

Why did you come to the conclusion that the effects on women and minorities is high/positive; a drug is not necessarily a positive development. The conclusion in the FEIS remains the same; it is based on the findings of medical professionals who think that taxol's performance in the treatment of women with certain forms of cancer has unusual promise. The assumption is that the more bark, and therefore taxol, that is available, the more women can be treated.

Chuck Edson commented that it would be a shame to waste bark, even though Bristol-Myers Squibb has announced it doesn't need it. We agree and the Pacific Yew Act of 1992 requires that yew bark be harvested from timber sale areas before other species are harvested. The Forest Service, BLM, and Bristol-Myers Squibb have entered into agreements for 1993 that ensures that yew bark will be harvested from sold sales and previously unfinished sales where there is yew.

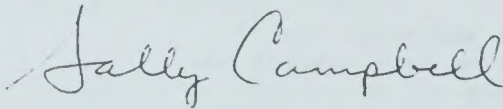
Amanda Wilcox asked that we consider other aspects of the yew tree rather than bark only and provide more information and interpretation on legalities of bark collection. We consider harvest of needles as well as bark for each alternative, except Alternative A. (See pages II-13, 14 of the FEIS.) Transfer of yew, administration of yew harvest permits, theft protection, and utilization policies will be guided and enforced by Forest Service and BLM policies.

Interpretation of any of these policies can be made by Forest Service and BLM yew coordinators.

Dick Wilcox stated that yew harvest needs to be cost-effective and that the EIS guidelines are not specific enough for the harvest to be cost-effective. The EIS gives relatively broad guidelines for yew harvest under each alternative, due to the large variation in sites, yew forms, yew densities, and resource issues over the five-state area covered by the EIS. Specific implementation procedures will be developed at the agency, national forest, BLM district, or individual project level to fit specific situations. Implementation procedures may change over time with new information and experience, leading to more efficient and effective yew harvest and protection.

We thank the Native Yew Conservation Council members for their review of the DEIS and interest in the yew tree, taxol, people, and the environment.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#24 20593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? no

Why or why not? 1) It does not require TPA. This plan varies only slightly from alternative F., but is different enough from G2 to make it seem preferable. T 51 shows enough both side by side to see how miss leading G1 really is.

I prefer Alternative B because: For sound forest management it meets more of the necessary requirements for ecosystem protection. This also meets current demands.

What other comments do you have? I believe many people will benefit from Yew back, however I feel the government (USFS) should treat this as a commercial product more realistically than timber

(Please Print)

Name: Hindu Tree ID# (from label) 4311
Organization: Trees View Stained Glass (aka Citizen)
Address: 17305 E11 Rd PO Box 29
City: Selma
State/Province: OR Zip Code: 97538
Country: Josephine

Pacific Yew EIS
Draft



United States
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Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Linda Tree
Tree's Vlen Stained Glass
PO Box 29
Selma, OR 97538

Dear Ms. Tree,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who responded to the draft EIS; we appreciate the time and thought. We have carefully considered your comments about Alternatives D and G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for yew on federal lands. In response to this change in demand and public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#25 20593

33 Da Vinci Street
Lake Oswego OR 97035
1993 February 3
503-635-8268

Sally Campbell
Pacific Yew EIS Team Leader
USDA Forest Service
P.O. Box 3623
Portland OR 97208

Dear Sally Campbell:

I would like to thank you and the other members of the Pacific Yew EIS Team who took part in the NYCC public meeting last Saturday. It was certainly an unexpected occasion for exploring new ground together! I hope you found it helpful. I would like to recapitulate and expand upon my oral comments.

The size and quality of the DEIS are a clear testimony to how hard you all have worked, and to what a good job you have done. I hope you will not let Bristol-Myers Squibb's (B-MS's) recent announcement make you feel that your efforts have been in any way futile. They have quit harvesting federal bark because they found it expedient to do so, and they could just as easily resume for the same reason. Others may want the bark which B-MS has scorned. It is good that the USDAFS and the BLM should have plans in place, with NEPA documentation, for use in such contingencies. For this reason alone you should press on with the "work thus far so nobly advanced." "The game isn't over till it's over."

Maybe the recent developments will give you a little breathing space. Until now the immediate need for bark has forced you to react to outside pressures. With these pressures relieved you may now have a chance to take the initiative. At present one can only speculate about the future importance of Pacific yew from federal lands. Maybe it will be significant and maybe it won't. You can now prepare for either case.

Since FDA approval for non-bark sources seems so imminent, I urge you to consider an Alternative precluding harvest methods that kill or injure the tree. This would mean no bark and no more needles than the tree or shrub could spare without compromising its health or its reproductive efficiency. You have already considered parameters of needle use. Perhaps you could expand this consideration to whatever extent might seem desirable under the new circumstances.

Needles can be most efficiently harvested in a plantation setting. Douglasfir is now grown in plantations on federal land. Pacific yew could be, also. I realize that studying the environmental impacts of such an Alternative would be a whole new area of inquiry for you. You would have to decide for yourselves how feasible or profitable such a study would be. The need for federal yew plantations probably would depend upon the medical demand for taxol, which would depend upon the degree and range of its efficacy. These factors can only be guessed at present.

Even if no need can now be seen for yew from federal lands as a source of taxol, the Pacific yew should still be protected. There should be no reversion to the status quo ante taxol that has been so widely lamented, where the species was trashed with wanton and reckless abandon. This episode should have driven home to all the need for maintaining biodiversity. There should be at least one Alternative

Eblin to Campbell 1993/02/03 page 2 of 2

providing for a very high probability of the long term survival of Taxus brevifolia with no impairment of its genetic diversity.

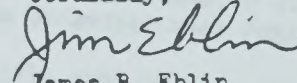
I am sure that it is not beyond the scope and power of silvicultural science to design a combination of management practices including reserves and plantations that could preserve intact the species, its genetic integrity, and the various ecosystems of which it is part while also providing significant quantities of taxol on a sustained yield basis. If this should need to be done, it could be done — if the Pacific yew is managed now in a way that preserves this option. I urge you to create an Alternative that preserves this option. Even if it is not adopted as the Preferred Alternative, its existence might still prove useful. Surely the provision of such an Alternative should enable you to feel that you had discharged your duties in a manner that was scientifically and legally and morally responsible.

Knowing that sooner or later I or someone I love probably will be stricken by cancer, I would rest easier knowing that you had done this. There would be further comfort in knowing that in so doing you had also created a paradigm for the management of all those species whose future use and value is problematical.

In this letter I have advocated the non-destructive harvest of the Pacific Yew; the preservation of its full integrity as a species, including its gene pool and the ecosystems in which it occupies differing niches; and the maintenance of the possibility of sustained yield taxol production. These objectives are consistent in spirit and could be consistent in practice. I would hope that you could fashion one Alternative encompassing them all. You may also receive suggestions from others whose thinking is along the same conservative lines as mine. If so, you might be able to incorporate them all into one "Conservative Alternative." This would provide cohesion and clarity while making your work easier. I do not say this to be telling you how to do your job, but in appreciation for all you have done, all you have yet to do, and the time constraints under which you must do it.

I have written this letter as a concerned private citizen, and I take full responsibility for it. Because much of my thinking developed and was clarified during a discussion held by the Board of Directors of the Native Yew Conservation Council, I think that it is only fitting and proper that I send a copy of it to NYCC President David Pilz.

Cordially,


James B. Eblin

copy to David Pilz



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

James B. Eblin
33 Da Vinci Street
Lake Oswego, OR 97035

Dear Mr. Eblin,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. The Pacific Yew EIS Team and I appreciated the chance to participate in the Native Yew Conservation Council's meeting and listen to your ideas concerning the conservation of yew.

As you know, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We agree with your assessment that the Forest Service and BLM should have plans in place. Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Regarding your suggestion to consider an alternative precluding harvest methods that kill or injure the tree: Please see pages II-13, 14 of the FEIS for a description of an alternative that would allow for a harvest of needles only. In response to suggestions, including yours, we considered this additional alternative, but did not carry out a full analysis of its impacts. All alternatives except Alternative A permit the harvest of any or all parts of the Pacific yew for taxol. Even though the FDA may approve taxol extracted from needles, we have no indication that needles from wild Pacific yew will be needed or requested. We did not consider an alternative that calls for wild yew plantations.

You suggest we consider an alternative that provides for a very high probability of the long-term survival of Taxus brevifolia with no impairment of its genetic diversity. We believe that the genetic reserve system is designed to maintain the genetic diversity and integrity of Pacific yew. It is an integral part of each alternative where harvest is allowed outside of timber sale areas.



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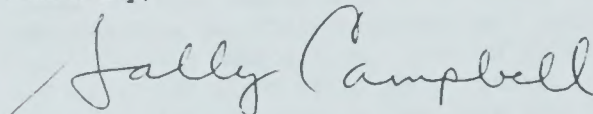


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You also suggest the creation of an alternative that protects the yew and the ecosystems and provides for quantities of taxol on a sustained yield basis. We did consider this alternative but did not carry forward a full analysis of its impacts (see page II-13 of the FEIS). Please see pages IV-7 to IV-9 for a clarification of sustained yield and how it relates to the alternatives.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#26 20893

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? Yes

Why or why not? It provides a good balance between providing yew bark, while protecting biodiversity, and not allowing yew harvest in Wilderness and HCA's, or other areas where timber harvest is not allowed (i.e. most roadless areas).

I prefer Alternative _____ because: _____

What other comments do you have? Should clarify definition of "Non-sale area" (P. II-20, C-2). Is timber harvest the same as yew harvest? Forest Plans talk about timber harvest. If Forest Plan says no timber harvest in a M.A., does this mean no yew harvest there, too?

Consider adding mitigation measures for yew harvest adjacent to trails. 12" high stumps along a trail would be ugly. Due to easier access along trails, yew would most likely be removed all along a trail. A buffer of 25' of each side of trail, where no yew harvest is allowed, would address this effect.

(Please Print) Name: Tom H. Davis ID# (from label) intrask

Organization: _____

Address: P.O. Box 92

City: Skykomish

State/Province: WA Zip Code: 98288

Country: _____

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Tom H. Davis
PO Box 92
Skykomish, WA 98288

Dear Mr. Davis,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You suggest that we clarify the definition of "Non-sale area" (DEIS page II-20, C-2). Our non-sale areas are defined as areas where timber harvest is not scheduled in the next five years, but where yew harvest only could occur. The non-sale acreage that we used in our calculations of available acres (for yew harvest from non-sale areas) included acres from management areas that allowed timber harvest as well as management areas that did not allow timber harvest, but did allow yew harvest.

You also suggested adding mitigation measures for yew harvest adjacent to trails for visual quality. We considered a mitigation measure for yew harvest adjacent to trails, but decided that site-specific analysis would address this type of concern quite adequately.



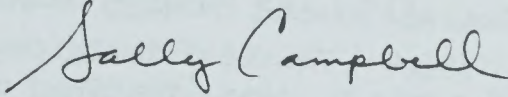
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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

A handwritten signature in cursive script that reads "Sally Campbell". The signature is written in dark ink and is positioned above the typed name.

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#27 12893

You Can Comment

We invite you to comment as we prepare the environmental impact statement. How are we doing? Have we offered a fair range of alternatives? What else should we consider as we analyze the proposed alternatives for yew harvest?

1/22/93

• ECONOMICS HAVE PREVAILED OVER E.I.S. NEED MORE OBJECTIVE ATTENTION TO ALTERNATE SOURCES.

• ALTERNATE SOURCES, I.E.; ASEXUAL PROPAGATION AND FOLIAGE BIOMASS PRODUCTION, WHEELER, WEYERHAEUSER, 10/28/91; "THE USE OF TREATED CONTAINERS TAXUS SPECIES" RESEARCH PAPER, COTNER, S.D., 10/92 - "THE EFFECT OF TREATED CONTAINERS DURING ASEXUAL PROPAGATION OF AXEN RUBRUM CULTIVARS" THE FORESTRY MAN, MAY, 1989, PG 12-13 ILLUSTRATED COTNER, S.D. - "OTHERS AVAILABLE. -> SIGNIFICANT INCREASE IN REVIEW AND ATTENTION.

WHEELER, A GOOD JOB IN PRESENTING!

• ON OTHER RESEARCH AND INCLUDE INTO PRESENTATION. (REF: "ACCELERATED BIOMASS PRODUCTION FOR TAXOL EXTRACTION" (SPIR INNOVATION RESEARCH GRANT & COOPERATIVE AGREEMENT APPLICATION; 12/92; COTNER, S.D. - RESEARCH PAPER, COTNER, S.D. "THE USE OF C-603 TREATED CONTAINERS FOR GROWING TAXUS; 2/92)

• I AM AVAILABLE BY YOUR REQUEST!

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

Official Business
Penalty For Private Use, \$300

Card and Address Correction



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Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Stephen D. Cotner
Master Horticulturist
10801 Forest St.
Garrettsville, OH 44213

Dear Mr. Cotner,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

We noted your suggestion that the EIS needed more objective attention to alternate sources for taxol such as asexual propagation and foliage biomass production. Please see the FEIS pages III-19, 20 for a discussion of some of these alternate sources. The purpose of the EIS is to analyze the effects of collecting yew material from yew trees in federal lands, so we did not describe alternate sources of producing taxol at great lengths.

We appreciate the offer to help. If you would like to send copies of your articles concerning yew, we would include them in our library.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#28 21095

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? No.

Why or why not? I agree with your rationale that the need for Taxol (from the bark of the Pacific Yew) will probably decline quickly within the next 5 years, already a possible substitute from the needles of a non endangered yew species is showing promise. But to look at the utility of the yew from the standpoint of Taxol production only may miss other significant developments that may require harvesting of yew in the future. ~~It is a mistake to~~

I prefer Alternative C or D because: I believe these two alternatives should provide a sufficient amount of Taxol until suitable substitutes are found without possibly → damaging the ecosystem as much as the preferred alternative. I would attempt to follow Alt. C's ~~own~~ guidelines first unless sufficient Taxol supplies could not be met then I would consider the extra harvesting to the Alt. D. levels

What other comments do you have?

My own personal view is that it is much better to leave behind a percentage of any harvest for future needs than to ~~to~~ clear an area with the intent to regenerate growth in the future.

(Please Print)

Name: Arnie Kubiak ID# (from label) 20

Organization: _____

Address: 7579 Bergman Road PE

City: Bainbridge Island

State/Province: WA Zip Code: 98110

Country: USA

Pacific Yew EIS
Draft



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Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Arnie Kubiak
7579 Bergman Road NE
Bainbridge Island, WA 98110

Dear Mr. Kubiak,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives G1, C, and D.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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9 Feb 93

Forest Service, USDA

#31 21198

Pacific Yew EIS Team

P.O. Box 3623

Portland, OR 97208

RE: Pacific Yew Draft Environmental Impact Statement

I do NOT support nor advocate the implementation of the preferred alternative (G1). With the recent development of Taxol extraction from the needles of European Yew species I feel the need to enter public areas of potential roadless quality to have decreased. Regardless of European or other Taxol sources, obviously we have wasted much Yew and other resources, through our inexcusable ignorance, by the wanton ecosystem destruction as a result of both public and private timber harvest programs. The maintenance of forest-wide biological diversity will be served best by no commercial harvest of any perennial plant species in areas not scheduled for commercial timber harvest.

I favor the implementation of Alternative B, the utilization of the Yew resource in instances in which it would otherwise be wasted due to timber harvest and/or archaic methods of pre-planting site preparation such as slash removal by burning.

Some other comments and/or recommendations are:

- 1) the cessation of clear-cutting as a means of timber harvest,
- 2) no further commercial timber harvest of publicly-owned primary, never-cut forests,
- 3) the reconsideration of public lands as a resource base, be it timber production or grazing or minerals production,
- 4) management of all public lands based on a philosophy of ecosystem diversity and the restoration of pre-industrial conditions rather than the current emphasis on even-aged stands of single-species monoculture, and
- 5) Access by the public to its lands via the existing road system and an extensive development of trails, camping, and day-use areas designed to allow future generations the privilege of experiencing the last remaining North American Temperate forests in a semi-pristine condition, while retaining all native wildlife species in such a condition that when our beneficial need for them (such as the Pacific Yew) becomes known, we have the option of their utilization.

Thank you

Mike Gross

ID# 3593

P.O. Box 768

Cascadia, OR 97329

USA



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Agriculture

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Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Mike Gross
PO Box 768
Cascadia, OR 97329

Dear Mr. Gross,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives G1 and B.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You also listed some recommendations regarding the management of resources in federal lands, such as cessation of clearcutting and harvest of old growth timber; the reconsideration of public lands as a resource base; management of all public lands based on a philosophy of ecosystem diversity; and access by the public to its lands via existing roads and extensive trails. The Forest Service and BLM are beginning ecosystem management. Assessments of ranges of "natural" conditions in many river basins across the region are underway. Biodiversity will be a key component. We will approach the management of natural resources in a new way, valuing a range of dynamic conditions in any given system.



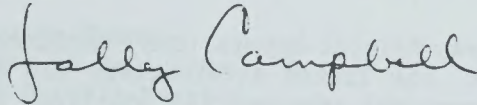
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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The yew team enjoyed working with you. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#32 21893

PACIFIC YEW DRAFT ENVIRONMENTAL IMPACT STATEMENT

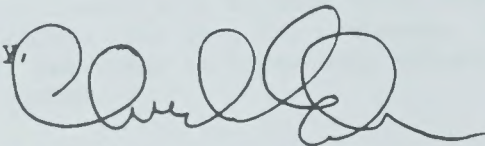
WHAT DO YOU THINK?

REGARDING ALTERNATIVES DISCUSSED IN EIR: Given Bristol-Meyers (BMS) announced policy to harvest no yews from public lands, the listed alternatives are no longer really pertinent -- unless the pharmaceutical reverses its position, or unless another manufacturer is sanctioned to harvest the species for Taxol.

OTHER COMMENTS:

1. I believe that yews in clear cut areas should be harvested and made available for production of Taxol, whether by Hauser/BMS or another manufacturer.
2. I agree with the (Native Yew Conservation Council) NYCC position (Jan.30) that production of Taxol from NW needles is justified, especially given that BMS apparently is undertaking precisely this technology with foreign supplies of Taxus.
3. I believe that the EIR should promote marketing of other economic uses of yew wood, especially.
4. I believe that the EIR should include comprehensive information on size distribution of yew on public lands. This information is available and can be published in the final report.
5. I promote more public research in propagating and cultivating yew. Experimentation should continue with both seed and cuttings, planting and cultivating the starts in nurseries, public lands and possibly with cooperating private orchards.
6. I believe that the EIR should document the waste of this now recognized valuable resource. Moreover, the report should evaluate impact of clear cut harvests on this, and other, species.
7. I believe that the EIR should promote establishing areas to protect critical and/or unique areas to study Taxus brevifolia.

Sincerely,



Charles Edson, owner-operator
Research Resources
528 Pacific Terrace
Klamath Falls, OR 97601 - USA

February 15, 1993

cc: David Pilz, President NYCC



United States
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333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Charles Edson
Research Resources
528 Pacific Terrace
Klamath Falls, OR 97601

Dear Mr. Edson,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the alternatives.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comments:

1. The Yew Act of 1992 requires yew to be harvested from timber sale areas; the Forest Service, BLM, and the Bristol-Myers Squibb Company have arranged for this yew harvest for the 1993 season. The identified preferred alternative (Alternative B) would make yew from timber sale areas available for harvest.

2. We agree, taxol may be produced from needles in the future. All of the alternatives proposed in the in the FEIS (except for Alternative A) allow for the collection of needles, if there should be a need for them.

3. The purpose of this EIS is to analyze the effects of a five-year bark harvest program. Yew wood may be used for purposes other than taxol, such as woodworking and fence posts.

4. Please see the FEIS page III-11 for a new graph and information about the diameter distribution of yew.



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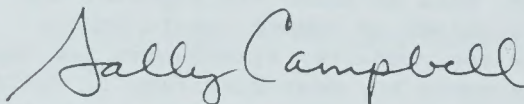
5. A number of researchers are currently investigating various aspects of Pacific yew biology, ecology, and genetics. (Please see Appendix M: Pacific Yew Research). Also, Pacific yew has been added to the list of species tallied and measured in Forest Service and BLM inventory programs.

6. The EIS does not document waste. Specific utilization standards were established for yew harvest in 1992 and 1993; compliance with standards are monitored as part of the administration of each transfer permit. The impact of proposed timber harvest on Pacific yew is not addressed in the FEIS; it will be analyzed during forest planning for specific national forests and BLM districts, as well as during site-specific analyses.

7. For Alternatives C through G2, genetic reserve areas are required in any planning area where yew will be harvested. (See Chapter II, page II-59 Mitigation Measures, of the FEIS). For Alternative B, all areas outside of timber sale units will function as genetic reserves. These areas, plus Research Natural Areas and other "set-aside" areas where timber harvest does not occur, can serve as study areas.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

Robert Turner
Acting Director



#33 21893

STATE OF WASHINGTON
DEPARTMENT OF FISHERIES

115 General Administration Building, M.S. AX-11 • Olympia, Washington 98504 • (206) 753-6600 • (SCAN) 234-6600

January 27, 1993

USDA Forest Service
ATTENTION: John Lowe, Regional Forester
Pacific Northwest Regional Office
333 Southwest First Avenue
Post Office Box 3623
Portland, Oregon 97208-3623

Dear Mr. Lowe:

I have been assigned responsibility for responding to the Pacific Yew Draft Environmental Impact Statement (including Appendices) on behalf of the Washington Department of Fisheries (WDF).

There is little that can be addressed with respect to fisheries resource issues since there is a lack of quantified relationships. The tacit assumption, made without technical foundation, is that a blanket restriction on harvesting Pacific yew within 50 to 75 feet of any perennial stream will be adequate to address all conceivable fisheries concerns.

However, the narrative does concede at several points that risks of adverse fisheries impacts will, in fact, vary for the different Alternatives. I first noted this type of language in the following from page S-29:

"The risk of impact would increase proportionately with the level of yew harvest: Alternative B - least impact; Alternative C - next largest impact; followed by Alternatives D, F, G1 and G2."

Other parts of the draft show inconsistencies with this concession. For example, Table II - 1 (page II - 42) expressed "no impact" for Alternatives A and B, but has an identical characterization for the remaining five Alternatives ("negligible to minor").

Another type of inconsistency was noted on page IV - 85 where the following statement appears:

"In small headwater areas, the harvest of Pacific yew could have a favorable effect by adding to the woody debris of the terrestrial, riparian and aquatic elements. It also adds to aquatic habitat complexity and stability."

USDA Forest Service
January 27, 1993
Page 2

It is unlikely that there would be any tangible benefit for small streams if there was no yew harvesting within 50 to 75 feet on either side of a stream. Similarly, I note the following in Appendix M-2 as the only fisheries related research proposed for Pacific yew:

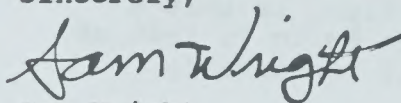
2. Determine what levels of yew harvest cause changes in the abundance or diversity of other vascular plants, vertebrates, invertebrates, fungi and algae.
3. Determine how much yew could be harvested from streams without altering the physical, chemical and biological attributes of those streams."

This second part seems at odds with the basic proposal of a 50 to 75 foot harvesting prohibition.

I believe that the current draft is inadequate with respect to dealing with fisheries resource issues. A seeming lack of technical evidence, pro or con, cannot be construed as proving that no significant problems exist. It also appears that there are no meaningful plans that will eventually lead to resolution of these issues. Finally, I note a lack of personnel with fisheries resource expertise throughout the "List of Preparers", "Other Contributors", and "Individuals and Organizations Consulted".

The opportunity to comment on this proposal is appreciated.

Sincerely,



Sam Wright
Fisheries Research Scientist
Habitat Management Division

SW:03

2526



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Sam Wright
Fisheries Research Scientist
State of Washington Dept. of Fisheries
115 General Administration Building, MS AX-11
Olympia, WA 98504

Dear Mr. Wright,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

In response to your statement that the restriction on harvesting Pacific yew within 50 to 75 feet of any perennial stream will be adequate to address all conceivable fisheries concerns is an assumption, without any technical foundation: We did not assume that harvest restrictions near perennial streams would "address all conceivable fisheries concern," but that this restriction would address the main concerns that have been raised, such as stream shading. In addition, site-specific evaluations are appropriate for identifying additional fisheries concerns. A 75-foot restricted area is the minimum we feel should be allowed, in our best professional judgement. In the FEIS we dropped the 50-foot buffer and added language to emphasize that 75 feet was a minimum and where other plans, prescriptions or analyses set wider buffers, these greater buffers would be adhered to. (See page II-56 of the FEIS.)

Further, you state that parts of the draft show inconsistencies with the idea that the risk of impact would increase proportionately with the level of yew harvest, with several alternatives having the same effects: Describing effects for several alternatives as being "negligible to minor" does not necessarily mean that the effects are equal for all alternatives. One may conclude that the effects are slightly higher or lower for various alternatives, yet are all minor effects. For all of the action alternatives, the adverse consequences of yew harvest to fish habitat for either anadromous or resident species would be negligible and not measurable. However, the risk to the habitat does increase from Alternative B through Alternative G2. The increase in risk is negligible, but real.

We made a change in the FEIS based on your accurate observation: We deleted the statement "In small headwater areas...complexity and stability." Please see page IV-80 of the FEIS.

Regarding your comment about proposed research about yew harvest and streams being in conflict with the proposed 75-foot buffer: Research need not be bound by management constraints; we are interested in information.



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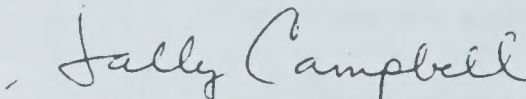


In response to your comment that the DEIS is inadequate with respect to dealing with fisheries resource issues and that a lack of technical evidence cannot be construed as proving that no significant problems exist: This document does not attempt to prove the lack of significant effects. Rather, it attempts to describe known effects and effects that are reasonable to conclude from other available information.

In response to your comment noting a lack of personnel with fisheries resource expertise in the "List of Preparers": Frank Roberts, a wildlife biologist on the team, has eight years experience working as a fisheries biologist. We added this information to his biography (see List of Preparers, page 3). The interdisciplinary team is composed of specialists of various, and sometimes overlapping, disciplines.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, especially the fisheries resource. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#34

22393

FEB 19TH, 1993

TO: SALLY CAMPBELL
USDA FOREST SERVICE
333 S.W. FIRST AV.
P.O. BOX 3623
PORTLAND, OR.
97208-3623

FROM:

MR JOHN MILLS 5-
#5678
10475 VINELAND RD
BEN LOMOND, CA
95005

DEAR MRS CAMPBELL;

THANKYOU FOR SENDING ME A COPY OF THE DRAFT
E.I.S. AND APPENDICES FOR THE PACIFIC YEW.

I FAVOR ALTERNATIVE B FOR THE FOLLOWING
REASONS:

1. IT APPEARS THAT THE YEW BARK HARVEST
FOR BRISTOL-MYERS SQUIBB IS A SHORT
TERM MEASURE FAVORING ONE DRUG COMPANY
IN A COMPETITION TO PATENT A TAXOL
DERIVED ANTI CANCER DRUG. THIS MAY
BRING SUBSTANTIAL ECONOMIC ADVANTAGE
TO BRISTOL-MYERS SQUIBB BUT SHOULD
NOT ADVERSELY IMPACT PUBLIC LANDS AND
THE ENVIRONMENT.
2. MEASURE B WILL HELP PROTECT THE YEW
TREE, MINIMIZE IMPACT ON NATURAL AREAS
AND UPON WILDLIFE.
3. MEASURE B WILL COST THE TAX PAYER LESS
AND MAKE IT MUCH EASIER FOR THE
FOREST SERVICE TO ENFORCE AND MONITOR
BARK HARVEST.
4. YEW TREES ARE "OLD GROWTH" NATIONAL
HERITAGE AND DESERVE OUR PROTECTION.

THANKS TO YOU ALL FOR PUTTING TOGETHER
THE DRAFT E.I.S. AND GIVING THOSE OF US
THAT ARE INTERESTED A CHANCE TO COMMENT,

SINCERELY,

ATTACHMENT.

John Mills #5678

"A BOW MAKERS QUEST" - STORY BY VAL RAWNSLEY
ABOUT DEFORESTATION OF YEW IN SPAIN, THE LONG
BOW SHOOTERS DIGEST NOV/DEC 1979.



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

John Mills
10475 Vineland Rd.
Ben Lomond, CA 95005

Dear Mr. Mills,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement and the attached story, "A Bow Makers Quest." We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative B.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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February 15, 1993

USDA Forest Service

#35

22893

John Lowe, Regional Forester
Pacific Northwest Regional Office
Portland, OR

Dear John Lowe, Sally Campbell, and other Pacific Yew EIS team members,

Little did I think I would have time to read the two volumes received in mail in early January "Pacific Yew Draft Environmental Impact Statement" and "Appendices". Due to surgery, I have completely read them from cover to cover and realize the intense thought and study besides time and money applied. This is not an easy matter to make decisions on. In the meantime, Bristol-Myers Squibb has made its announcement of other source of Taxol than from the Pacific Yew. We hope that this study will continue and also other plants, shrubs, trees, and animal, insect, fish, human life will be considered.

Alternative B would have been our choice due to the ability to use the Pacific Yew bank for Taxol but also leaving a fair amount for the future. We can not think of the forest for our use today only. Future generations have as much right to it as we do. True freedom is giving, not taking. We need to think of what we can give to future generations. Any harvesting should consider ~~any~~ even flow rate with a minimum of one hundred years for reharvesting. Supply should meet minimum current demand. ^(Pacific Yew) Bark harvesting of 750,000 pounds per year should be adequate from National Forest ^{Service} and Bureau of Land Management areas. If we understand correctly, this would produce 25 kilograms of Taxol ^(and recovered to) to treat 12,000 patients. Private timber lands should be supplying a fair amount too but the private timber/logging companies are becoming dependent on the government supplying needs when they haven't used good judgment ^{management} — maybe purposely done.

We were disturbed to think part of the Taxol would go to supply foreign needs. An exchange of ideas and experimenting on drugs is important in small amounts. We must be aware of using what we have today and "so what with tomorrow." It is sad to see people afflicted with incurable diseases. We can help some of them but we should not feel like the world will come to an end if we don't try to cure or treat all of them. Taxol is still in experimental stages. The treatment is not pleasant and is like most chemodrugs — many side effects. Long term treatment ^{is} not really known yet. Cure for cancer = not stated as such with present studies. The "public" seem to be given the impression that Taxol was definite cure and of course the majority of people then want all Pacific Yew bark harvested to obtain maximum of Taxol. We must think of future generations. Pacific Yew obviously has a purpose in our ecosystem so we must

leave the major part of what is left for future generations. Our over population and many new comers cause much difficulty with trying to teach/understand this concept.

Taxol being discovered in 1962 but no real attention until 1978 seems a bit puzzling to me. The big push didn't seem to come until 1991-1992. This has motivated study of the Pacific Yew but is actually a bit late due to harvesting already being started and in rather big way for the amount of resources.

Economic benefits? There are too many factors here involved. Large numbers of people moved into the Pacific Northwest in late 1940's and through the 1950's from southern and south-central states to work in the woods and timber industry jobs. Private industry/land owners have been cutting their timber off rapidly. Much of this land has been developed so it is no longer useable for timber harvest especially since 1980. Why should, and how can our national forest be expected to take up this slack in this short sighted slaughter/rape of our land? Yes, this is an issue of people versus people. The majority aren't always aware of what is best for them.

In replanting, we find a bit of conflict in statement of fertilizers being used. Why not let nature do as much as possible? Fertilizers, herbicides, insecticides, etc. all leach into ground water, into streams and into our drinking water. What are we left to drink?

Studies will continue for animal involvement/effects but harvest in non-timber sale areas would definitely cause more disturbances to them. Use of Pacific Yew logs should be considered soon after cutting, ^(if they are going to be used) as the wood could be hard to work if left to cure for length of time — it becomes very hard. Tribal input is a must — they should have some good input.

Whatever decisions are made we must remember that we have no life if we have no ecosystem balance.

Sincerely,

Oliver Hook

Donald W. Hook 3773
466 - 22nd Ave
Longview, WA 98632



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Alice and Donald W. Heck
466 22nd Ave.
Longview, WA 98632

Dear Mr. and Mrs. Heck,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative B.

As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We noted your opinion that any harvesting should consider an even-flow with a minimum of 100 years for reharvesting, and that supply should meet minimum current demand. We rewrote the section on sustained yield for clarification. (See pages IV-7, 8 of FEIS.)

We noted your very thoughtful comments on use of taxol for people throughout the world, awareness of preserving resources for the future, that taxol is not a cure, over-population, and the issue of people versus people in the Pacific Northwest.

In response to your concern about fertilizers being used in replanting: Use of fertilizer will be determined in site-specific prescriptions. Generally, fertilizer is not used during reforestation on federal lands.

In regard to your comments about disturbance effects on wildlife: These effects would be short-term and relatively minor for most species. We added information about disturbance effects for species associated with late-successional forests. (See pages IV-85, 86 of FEIS.)



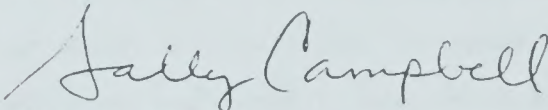
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We have also added more information about tribal uses of Pacific yew (see pages III-116, 117 of the FEIS) and added a mitigation measure to ensure tribal input and adherence to tribal treaties.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

Feb. 14, 1993

#36 22393

Dear Forest Service Planners,

We would like to make the following comments for the Pacific Yew EIS.

- * Propagation and replanting of Yew is new, and therefore experimental. Re-establishment of Yew trees should not be "counted on," the way it is for Douglas fir. Yew should be treated as a NON-RENEWABLE resource, at least until it can be proved that Yew can be regrown in a reasonable time frame.
- * Yew harvesting should be only of the Renewable parts of the trees, i.e. foliage, until it can be proved that the trees can be regenerated.
- * Yew harvesting should not be allowed until there is sufficient inventory of Yew locations, volume, health, etc.
- * Yew harvesting should not be allowed in SOTAs or other areas outside the timber base - Riparian areas, streamside zones, wilderness areas, etc.
- * Yew harvesting should not be allowed outside of timber sale areas.
- * If Bristol-Meyers Squibb doesn't want any more Yew, then don't cut anymore.
- * Treat Yew as NON-RENEWABLE and encourage companies to research synthetic taxol.
- * Don't cut Yew in Ancient Forests.
- * Use Yew as an example for the need to

protect all species (and viable ~~gene~~ genetic
populations off ~~all~~ all species) whether
a ~~species~~ species is large, small, valuable
to people or not, etc.

* Taxol is only prolonging patients lives for an average of
5 months. Taxol is not saving lives.

Sincerely,

Margaret Newman

Albert Durkee

Margaret Newman

Albert Durkee

1458 Grant St.

1458 Grant St

Bellingham WA 98225.

Bellingham.

5791



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Margaret Newman and Albert Durkee
1458 Grant St.
Bellingham, WA 98225

Dear Ms. Newman and Mr. Durkee,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who responded to the draft EIS; we appreciate the time and thought. We made a number of changes in the final Environmental Impact Statement. I'll attempt to address some of your concerns about the yew tree here.

You stated that re-establishment of yew trees should not be "counted on" and yew should be treated as a non-renewable resource. Regeneration of yew trees after harvest is a major concern addressed in the EIS. We believe, based on past success and extensive experience regenerating and replanting both coniferous and hardwood species, that yew can be successfully regenerated.

In response to several suggestions, including yours, we included a proposal for an alternative that would allow for the harvest of yew needles only, but we did not carry out a complete analysis of the impacts of this proposal. Please see page II-13 of the FEIS for a description of this proposal. Each of the proposed alternatives allows for the collection of needles, should there be a need for them.

You state that yew harvesting should not be allowed until there is sufficient inventory of yew locations, volume, health, etc.: Both the Forest Service and the BLM conducted inventories. We believe these inventories give us a good estimate of the number and sizes of yew available. In addition to the regional estimates of yew amounts, many forests and districts have completed intensive, site-specific surveys. In addition, as the Forest Service and BLM move into ecosystem management, more multi-species inventories will be made that will give us greater estimates of yew.

As to the health of yew and yew populations and the impacts from insects and diseases, current information does not reveal any natural pest that could threaten yew. The analysis of the risk to yew due to activities proposed in the alternatives was based on this knowledge. As new information becomes available about the health of yew, through research and inventories, projects that propose to harvest yew under the selected alternative will be modified to take advantage of that new information (see page III-32 of the FEIS).



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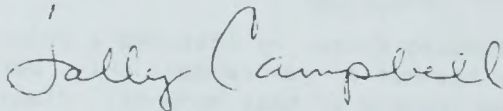
You suggest that yew harvesting should not be allowed in SOHA's or other areas outside the timber base: See Chapter II for a description of the proposed alternatives. Only Alternative G2 would allow yew harvest in any of the areas you mention.

In regards to your comments that "yew harvesting should not be allowed outside timber sale areas" and "If Bristol-Myers Squibb Company doesn't want any more yew, then don't cut anymore": As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

In regard to your concerns for the regeneration, health, and viability of the yew species: The system of genetic reserves is designed to maintain many representative gene pools of the species in a natural state. Further protection is afforded by riparian corridors, and the fact that yew often sprouts when cut. The mitigation measures (see page II-55 of the FEIS) describe the provisions for regeneration and protection of the yew species.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#37 22693

Feb. 22, 1993

Pacific Yew Draft EIS

Sally Campbell,
Pacific Yew EIS Team Leader
U.S. Forest Service
Pacific Northwest Region
P. O. Box 3623
Portland, Oregon 97208

Dear Sally;

I have the following comments on the Pacific Yew Draft EIS.

ROADLESS AREAS

On page IV-112, I was glad to see the following: "It is unlikely that any roadless areas would be entered for the purpose of yew harvest." I wish the same were true for timber harvest in general.

I have followed the RARE II process closely, and also the re-analysis of roadless areas within the forest planning process for all the national forests in Idaho. I find somewhat confusing the following paragraph, under "Roadless Area Designation", on page III-88:

"In the past, forests included formal Roadless Areas, classified under the RARE II (Roadless Area Review and Evaluation) designation, but this designation is no longer used. All former inventoried (RARE II) roadless areas were re-analyzed in the forest planning process for each national forest. As a result of this process, roadless areas became reallocated to various management allocations. Some portions of these areas are now within allocations that maintain roadless characteristics, such as wilderness or dispersed unroaded recreation; other portions are in allocations that permit a full range of multiple use activities. These areas and their current allocations are outlined within each forest plan."

The first sentence is incorrect, since the Forest Service still uses the term "roadless area", and correctly so, since it describes the physical reality of what is a very important resource. I would suggest re-writing the paragraph; for example:

"Roadless areas are those remaining undeveloped areas in the national forests outside designated wilderness areas, which were inventoried in the late 1970's during RARE II (Roadless Area Review and Evaluation), and subsequently re-analyzed in the forest planning process for each national forest. Each forest plan allocates the respective roadless areas to various management prescriptions."

WHY IS ALTERNATIVE G1 BETTER THAN C ?

I don't understand why G1 is the preferred alternative, unless it is because of the projected lower cost to the government (\$2.9 million/year vs \$5.9 million/year for alternatives C, D, and F). The F.S. doesn't now charge for yew bark (p II-54); perhaps you should consider doing so.

Otherwise, I think that alternative C looks better than G1. It has a predicted impact of "minor" on T&E species vs "moderate" for G1, and also "minor" impact on wildlife in late successional forests vs "moderate" for G1. And both alternatives would provide "adequate access" to the raw material for taxol. (Table II-1, p II-41)

In addition, G1 would allow harvest at a rate well above the even-flow rate of 1.48 million pounds of bark per year over a 100 year period (p IV-21). G1 would allow 3.2 to 4.7 million pounds per year; C would allow 1.2 to 1.8 million (Table II-1, p II-41). Even though it is expected that an alternate source of taxol will be available in 3 to 5 years (p II-14), which may or may not be accurate, it may not be wise to exceed the even-flow harvest rate.

Sincerely,

Jerry Jayne

Jerry Jayne
1568 Lola St.
Idaho Falls, Idaho 83402

5792



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Jerry Jayne
1568 Lola St.
Idaho Falls, ID 83402

Dear Mr. Jayne,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the proposed alternatives and made several changes in the final Environmental Impact Statement.

We appreciate your suggestion for rewriting the paragraph on page III-88 of the draft to clarify the use of the term "roadless area." Your paragraph will be substituted for the previous one and included in the final EIS.

We noted your opinion that Alternative C was preferable to Alternative G1. As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#38 30193

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? NO
Why or why not? _____

see attached letter

I prefer Alternative B because: _____

What other comments do you have? _____

(Please Print)

Name: Gary Westerlund ID# (from label) 3508

Organization: _____

Address: 9623 S. 205th Pl

City: Kent

State/Province: WA Zip Code: 98031

Country: _____

Pacific Yew EIS
Draft

9623 S 265th Pl

Kent WA 98031

February 22, 1993

Pacific Yew EIS Team:

I disagree with the preferred alternative, G1. The DEIS has not demonstrated that future demand for taxol will require alternative G1. According to Table II-1, Alternative B meets current demand. Alternative G1 provides 12 times as much bark. Will demand grow 12 times in 5 years? The DEIS states that the importance of yew in the ecosystem is unknown (Page S-6) and likely plays a "unique role." The DEIS has not addressed what effect a decrease in taxol in the natural environment will have. The role of yew in wildlife habitat is poorly understood (P. S-29). Yew is extremely slow growing (P. III-22) and will take generations to replace. Since the role of yew in the ecosystem is poorly understood and since yew is extremely slow growing I recommend a go-slow approach until the Forest Service has a better understanding of yew's role. It is a big assumption that taxol can be synthesized in 5 years. There are no guarantees. Alternatives C-G2 preclude long term even flow level of harvest (P. S-31). Therefore I prefer alternative B. B provides for a long term even flow level of harvest, and minimizes the effect of removing yew and its taxol from the natural environment, and B meets the current demand for taxol.

I am very irritated that the government expenditures associated with bark harvest and the returns to counties are not covered by the potential receipts to government (Table II-1). With our current national budget crisis it is absolutely imperative that any usage/selling of the public's natural resources should result in a net positive cash flow to the government. Selling resources below cost does not promote the wise use and best use of those resources. Increasing the cost of taxol from public lands encourages private companies to synthesize taxol and minimizes the effect of yew harvest on the natural environment.

Another point not addressed in the DEIS is whether taller yew stumps should be left to encourage resprouting. Is there a higher chance of resprouting if a 24" stump is left instead of 12"?

Sincerely,

Gary L Westlund



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Gary Westerlund
9623 S. 205th Pl.
Kent, WA 98031

Dear Mr. Westerlund,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the proposed alternatives and made several changes in the final Environmental Impact Statement.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comment that "The DEIS has not addressed what effect a decrease in taxol in the natural environment will have.": Information to assess the effects of a decrease in taxol in the environment is not known and would be extremely expensive and time consuming to obtain. We believe a reasoned decision can be made without this knowledge.

In response to your concerns that expenditures associated with bark harvest and the returns to counties are not covered by the potential receipts to government (Table II-1): The Forest Service and the Bureau of Land Management sell bark on the open market. These sales sell in the range of \$0.25 to \$0.30 per pound (green). If the government were to artificially raise the price above this level, bark purchasers would not be able to cover their costs and would not purchase bark. The obstacles to taxol synthesis are technological; if yew bark from public lands could not be purchased profitably, the short-term effect of this would be that taxol might not be available for patient treatment.



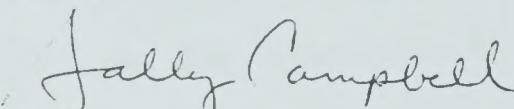
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In response to your question: "Is there a higher chance of resprouting if a 24" stump is left instead of 12?": The 12" stump height was taken from an "Interim Guide to the Conservation and Management of Pacific Yew", written by a scientific committee. They determined that 12" was an adequate height for sprouting. Twelve-inch stump heights provide more dormant sprout buds than shorter stumps, and also dry out more slowly.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#39 30193

Samuel T. Frear
4734 Brookwood Street
Eugene, Oregon 97405

27 February 1993

Forest Service, U.S.D.A.
Pacific Yew EIS Team
P.O. Box 3623
Portland, Oregon 97208

Greetings!

The decision by Bristol-Meyers-Squib to withdraw from obtaining Yew bark to make Taxol, in favor of an new artificial process throws the entire environmental statement into question. I refer you to the statement on III-111: "Synthesis of taxol is difficult and has yet to be achieved in usable quantities."

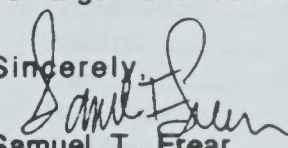
I recommend you redraft this Environmental statement to include an alternative that would read: "Every effort will be made to protect existing stands of yew with the only permitted removal will be for research purposes to determine if there are significant commercial uses of this forest product."

The Forest Service can utilize the next few years in learning more about the Yew tree before someone else comes along with a hot idea. The Environmental statement is replete with comments such as on III-30: "There have been few studies..." and on III-19: "The frequency, size and distribution of Yew tree seed crops are unknown."

A grammatical note: the word you are looking for on Page S-6 is contingent.

A style note: The figure headings, such as at the top of page S-7 need to be larger and bolder.

Sincerely,


Samuel T. Frear

3418



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Samuel T. Frear
4734 Brookwood St.
Eugene, OR 97405

Dear Mr. Frear,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your proposal to include a new alternative in the final EIS, but decided not to include it because taxol has already been approved for commercial use by the Food and Drug Administration (FDA). We find the range of alternatives still reasonable within the scope of the proposed action.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#40 30293

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? F.
Why or why not? why - because it gets the maximum
use out of a renewable resource.

I prefer Alternative F because: answered above.

What other comments do you have? I was dying after
reading all the bologna in these two books.
and the expense it must have cost the tax
payers of the USA and we have a 4 trillion dollar
Debt - no wonder.
Sounds like BMS to B M & Squibb is making it anyway so the
few can shrink back into the shadows

(Please Print)

Name: Kenneth M. McCulley ID# (from label) 20
Organization: McCulley Logging Co. through the cover
Address: P.O. Box 360 away.
City: Happy Camp
State/Province: Cal. Zip Code: 96039
Country: USA.

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Kenneth M. McCullen
McCullen Logging Company
PO Box 360
Happy Camp, CA 96039

Dear Mr. McCullen,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative F.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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FOREST SERVICE, USDA
PACIFIC YEW E.I.S. TEAM
P.O. BOX 3623
PORTLAND, OREGON 97208

DEIS COMMENTS

FEBRUARY 23, 1993

#41 30393

"...NOT MUCH INFORMATION IS AVAILABLE ABOUT PACIFIC YEW DUE TO ITS PREVIOUS LOW COMMERCIAL VALUE. BECAUSE OF THIS DEARTH OF INFORMATION, OUR ANALYSIS ALSO IS BASED ON SEVERAL ASSUMPTIONS AND GUIDELINES..."

PACIFIC YEW DEIS, PG. II 4, "ENVIRONMENTAL CONSEQUENCES"

DEAR FOLKS,

I APPRECIATE THIS OPPORTUNITY TO COMMENT ON THE PACIFIC YEW DEIS. AS ILLUSTRATED ABOVE, I BELIEVE THIS DOCUMENT IS RIDDLED WITH ASSUMPTIONS THAT CANNOT BE QUALIFIED GIVEN OUR CURRENT KNOWLEDGE OF THESE DIVERSE ECOSYSTEMS. THEREFORE, THE ANALYSIS, AS PRESENTED, IS INADEQUATE AND I CANNOT SUPPORT THE PREFERRED ALTERNATIVE FOR THE FOLLOWING REASONS:

GENERAL

BY LAW, YOU ARE REQUIRED TO ANALYZE A "NO-ACTION" ALTERNATIVE AND YET THE DOCUMENTS OBVIOUS BIAS AGAINST THIS COURSE OF NO-ACTION IS APPARENT FROM THE START. THE PURPOSE AND NEED (PG. 5-4) STATES THAT THE REGIONAL FORESTER AND STATE DIRECTOR (BLM) "...WILL SELECT A YEW HARVEST ALTERNATIVE...". THIS BEFORE WE EVEN GET OUT OF THE SUMMARY! WHEN WE DO GET TO THE ALTERNATIVES THEMSELVES, THE "NO-ACTION" MODEL APPEARS AS AN UNFATHOMABLE MUTANT. WHEREAS IN, SAY, A ROADLESS AREA TIMBER SALE E.I.S., "NO-ACTION" MEANS JUST THAT—NO ENTRY, NO ROADING, NO TIMBER CUTTING—IN THIS INSTANCE, THE NO-ACTION ALTERNATIVE SUGGESTS WE ENTER A SORT OF TIME MACHINE AND ERASE OUR MEMORIES. YES, WE ARE TO PRETEND IT IS SOMETIME PRIOR TO 1989 AND THERE IS NO SIGNIFICANT DEMAND FOR YEW BARK/TAXOL. PACIFIC YEW WILL BE TREATED AS AN UNDESIRABLE "TRASH" COMPONENT IN SALE UNITS AND NO EFFORT WILL BE EXPENDED TO UTILIZE OR PROTECT IT. IN MY OPINION, THIS PERSPECTIVE IS UNREALISTIC, SKEWED TO DIRECT ATTENTION TO THE REMAINING ALTERNATIVES, AND NOT AT ALL CONSISTENT WITH THE COURSE OF ACTION A PRUDENT PUBLIC LANDS MANAGER WOULD TAKE GIVEN OUR CURRENT UNDERSTANDING OF THE PACIFIC YEW. THIS ALTERNATIVE IS AS RIDICULOUS AS IT IS WORTHLESS. AT A MINIMUM, A "NO-ACTION" ALTERNATIVE WOULD BE BASED ON EXISTING INFORMATION.

MUCH IS MADE ABOUT SO-CALLED "GENETIC RESERVES" PARTICULARLY AS IT APPLIES TO THE PREFERRED ALTERNATIVE. WHAT IS NOT ADDRESSED IS THE RELATIONSHIP BETWEEN ILLEGAL BARK HARVEST AND THE POSSIBLE AGENCIES ABILITY TO MAINTAIN THE GENETIC VIABILITY OF PACIFIC YEW THROUGHOUT ITS RANGE. YEW THEFT IS SAID TO BE OUTSIDE THE SCOPE OF THIS DOCUMENT (PG. II-9). I DISAGREE. THE ASSUMPTIONS YOU MAKE CONCERNING GENETIC VIABILITY ARE BROAD ENOUGH BY THEMSELVES, BUT BECOME CONSIDERABLY WEAKER WHEN "REAL WORLD" CONSIDERATIONS ARE FACTORED IN. USFS ESTIMATES OF BARK THEFT IN 1991 ALONE (PG. III-109) AMOUNTED TO OVER $\frac{1}{3}$ AS MUCH AS LEGALLY HARVESTED BARK. THIS DOES NOT INCLUDE THEFT FROM B.L.M. LAND. HOW MUCH WOULD SIMILAR LEVELS OF THEFT IN THE FUTURE AFFECT PROPOSED GENETIC RESERVES AND SPECIES CONNECTIVITY FOR THE YEW? THIS MUST BE ANALYZED AND DISCUSSED IN THE FINAL E.I.S.

②

DEIS COMMENTS (CONT.)

FEBRUARY 23

"THE EFFECT TO YEW CAUSED BY FORT-ORRARD-CEDAR ROOT DISEASE PHYTOPHTHORA LATERALIS, WOULD BE MINOR FOR ALL ALTERNATIVES."

PACIFIC YEW D.E.I.S., PG. II-50
ENVIRONMENTAL CONSEQUENCES

ALTHOUGH IT WAS FIRST DISCOVERED IN NORTHWEST NURSERIES IN THE 20'S, OUR UNDERSTANDING OF P.LAT AND ITS EFFECT ON OUR FORESTS HERE IN S.W. OREGON REMAINS EXTREMELY LIMITED. TO MY KNOWLEDGE THERE IS STILL NO METHOD OF DETECTING THIS PATHOGENS PRESENCE OTHER THAN DEAD TREES OR PLANTING LIVE TREES AND SEEING IF THEY DIE (IN FIELD SITUATIONS). SO, I AM PUZZLED BY STATEMENTS SUCH AS "... THE INOCULUM LOAD... IS CONSIDERED TO BE VERY HIGH..." (PG. II-50 EMPHASIS MINE) AND "... YEW OUTSIDE THESE AREAS, INCL. ALL YEW OUTSIDE THE NATURAL RANGE OF P.O.C., IS CONSIDERED TO BE SAFE FROM INFECTION." (SAME PAGE, EMPHASIS MINE). WHAT IS THE SCIENTIFIC BASIS FOR THESE ASSUMPTIONS? I WOULD LIKE TO KNOW WHAT "FIELD OBSERVATION METHODS" (PG. II-50) WERE USED TO DETERMINE THAT YEW IS "LESS SUSCEPTIBLE" TO INFECTION BY P.LAT. THIS AS OPPOSED TO YEW SIMPLY TAKING LONGER TO DIE, ONCE INFECTED. YOU EVEN ADMIT THE EFFECTS OF P.LAT ON YEW IN THE FIELD ARE UNKNOWN (PG. III-34 IS "UNKNOWN" THE SAME AS "MINOR" AS FAR AS YOU ARE CONCERNED? FURTHER MINIMIZING THE THREAT THIS INTRODUCED DISEASE POSE TO THE YEW, YOU STATE THAT "THE TOTAL AREA WITH INFECTED TREES IS LESS THAN 30 ACRES." (PG. III-34) PERHAPS THIS IS THE KNOWN INFECTED ACREAGE AND SHOULD (MUST) BE IDENTIFIED AS SUCH. PLEASE DISCLOSE THE FACT THAT TOTAL INFECTED YEW ACREAGE IS UNKNOWN.

BEYOND THESE THREE GENERAL POINTS, I HAVE ADDITIONAL CONCERNS
SPECIFIC

"...THE ROLE YEW HAS IN PROVIDING FOR WILDLIFE HABITAT IS POORLY UNDERSTOOD. THIS COULD RESULT IN A SUBSTANTIAL RISK TO WILDLIFE IF LARGE AREAS OF YEW WERE HARVESTED IN A SHORT TIME FRAME."

YEW DEIS, PG. II-50
ISSUES, ALTERNATIVES,
AND COMPARISONS (WILDLIFE)

RE: THE ABOVE STATEMENT; WHAT CONSTITUTES A "SHORT TIME FRAME"? DO YOU CONSIDER "SUBSTANTIAL" RISK AN "ACCEPTABLE" RISK IN THE CONTEXT OF AN INTENSIVE, 5-YEAR, HARVEST PROGRAM?

• PG. II-52, PARAGRAPH 1 - WHAT EXACTLY CONSTITUTES AN "ACCEPTABLE THRESHOLD LEVEL"? HOW WAS THIS LEVEL DEVELOPED?

• PG. II-61, PARAGRAPH 1 - DEFINE "MANAGEMENT AREA" AS USED IN FIRST SENTANCE.

• PG. III-10, TABLE - RELATIVE TO THE OTHER FORESTS LISTED, THE SISKIYOU HAS A VERY LOW NUMBER OF KNOWN YEW TREES. DO YOU PLAN ON CUTTING YEW ON THE SISKIYOU? I AM OPPOSED TO CUTTING SISKIYOU YEW DUE TO THESE LOW POPULATION ESTIMATES.

• PG. III-21, PARAGRAPH 1 - DO YOU PRESUME THAT THE "PRELIMINARY" RESULTS OF A SPROUTING STUDY IN AN UNBURNED TIMBER SALE IN W. OREGON WILL BE APPLICABLE ON A REGION-WIDE BASIS TO PREDICT STUMP-SPROUTING SUCCESS RATES?

③

DEIS COMMENTS (CONT.)

FEBRUARY 23

- PG. III-86, TABLE - ACCORDING TO THIS TABLE, THE MURRELET EXISTS ONLY ON THE BLM COOS AND SALEM DISTRICTS IN COASTAL SALT MARSHES. THIS IS IN ERROR
- PG. III-108, PARAGRAPH 3 - I FIND IT ABSURD THAT THE USFS IS NOT CHARGING FOR YEW BARK! WHY IS THIS?
- PG. IV-58, PARAGRAPH 4 & IV-59, PARAGRAPH 3 - WITHIN ONE PAGE, 70% OF STUMPS WHICH "SHOULD" RESPOND CHANGES TO "COULD" RESPOND. WHY THE SUDDEN CHANGE OF WORDING? AGAIN, WHERE DOES THIS "70%" FIGURE COME FROM, WHEN USED IN A REGIONAL CONTEXT?
- PG. IV-65, PARAGRAPH 2 - I DISAGREE THAT "OTHER TOLERANT MIDSTORY SPECIES MAY BE ABLE TO SUBSTITUTE FOR YEW STRUCTURALLY." THE SPECIES LISTED ARE VASTLY DIFFERENT FROM PACIFIC YEW, BOTH IN FORM AND LANDSCAPE POSITION. THE BASIS OF YOUR ASSUMPTION, PLEASE.
- PG. IV-65, PARAGRAPH 3 - I FIND A "HIGHLY SPECULATIVE" ANALYSIS INADEQUATE, ESPECIALLY IN DISCUSSING THE ENVIRONMENTAL CONSEQUENCES ON ECOSYSTEM FUNCTION, A MAJOR CONSIDERATION IN THIS DOCUMENT.
- PG. IV-92, PARAGRAPH 3 - PLEASE EXPLAIN HOW AN OREGON COAST OVERSTORY-REMOVAL STUDY POSSIBLY CORRELATES TO REGION-WIDE ASSUMPTIONS ON MID-STORY YEW REMOVAL, PARTICULARLY AS IT APPLIES TO THE "ABUNDANCE AND FITNESS OF VERTEBRATES USING THE AREA".
- PG. IV-94, PARAGRAPH 1 - I CHALLENGE THE ASSUMPTION THAT MOOSE WINTER RANGE WOULD BE BETTER OFF UNDER ALTS. C-GZ THAN UNDER ALTS. A-B. DISPLAY YOUR METHOD OF ANALYSIS PLEASE.
- APPENDIX D-2, TABLE - YOU OMITTED THE OREGON CAVES N.M.

SUMMARY

GIVEN OUR CURRENT LACK OF KNOWLEDGE OF THE PACIFIC YEW AND ITS RELATIONSHIP TO FOREST ECOSYSTEMS COUPLED WITH THE FACT THAT WE HAVE ALREADY WASTED 90%+ OF THE RESOURCE DUE TO GREED AND IGNORANCE, THERE IS REALLY NO JUSTIFICATION FOR ANY OF THE ALTERNATIVES OFFERED. HOWEVER, IN THE INTEREST OF THOSE PEOPLE ALREADY RECEIVING SOME SORT OF TAXOL TREATMENT, I WOULD SELECT ALTERNATIVE 'B' WITH SOME MODIFICATION: ① ESTABLISHMENT OF GENETIC RESERVES AND ② 50% UTILIZATION IN PARTIAL-CUT UNITS.

THE BOTTOM LINE, OFCOURSE, IS THAT ALL AVAILABLE RESOURCES SHOULD BE DIRECTED AT SYNTHESIS OR PARTIAL SYNTHESIS OF TAXOL AND UTILIZATION OF NURSERY CUTTINGS AND CULTIVATED STRAINS OF YEW.

THE PACIFIC YEW MAY INDEED HAVE MUCH MORE TO TEACH US, AND THIS MANDATES PRESERVING AS MUCH OF IT AS POSSIBLE IN A NATURAL STATE. DAY BY DAY, THIS BECOMES AN INCREASINGLY RARE COMMODITY.

THANK YOU FOR YOUR CONSIDERATION OF MY INPUT AND ANSWERS TO MY QUESTIONS

RESPECTFULLY,

TIM SCULLEN
BOX 1518
GOLD BEACH, OR. 97444

Tim Scullen



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Tim Scullen
Box 1518
Gold Beach, OR 97444

Dear Mr. Scullen,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives A and B.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Although we consider the issue of theft to be outside the scope of this EIS, we do address it briefly in the FEIS (Chapter II, page II-8; Chapter III, page III-100; Chapter IV, pages IV-109 and IV-115). Theft of yew trees or bark is covered under theft of government property statutes. Federal agencies increased monitoring patrols in areas of yew concentration or where there was evidence of yew bark theft. After strict accountability standards for the collection of yew bark were implemented in 1992, bark theft decreased dramatically. The impact of theft on population connectivity and genetic viability should be relatively minor. It is unlikely that large contiguous blocks of yew will be stolen. If theft does occur, it should have a relatively scattered distribution and should not greatly affect population connectivity. Additionally, the genetic reserve system is purposely redundant to allow for possible theft or natural catastrophes, such as fire.

In regard to your questions and concerns regarding Phytophthora lateralis: there is an existing body of literature available, an active research and development program, and a proven and useful set of guidelines for minimizing the impact of this disease. (See page III-33 and Appendix C of the FEIS.)



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Our professional opinion pertinent to the risk and potential for infection is based on the results of laboratory inoculations as well as extensive field observations including the recent yew inventory where inventory crews were trained to look for and identify symptomatic yew. They also reflect the view of scientists and researchers in this field that Pacific yew is, at best, a minor host to P. lateralis and is only infected under conditions where the disease has been established in POC for many years and where the number of infected POC provide a large number of spores (high inoculum load) for infection. (See page IV-46 of the FEIS.) The estimate of the acreage of infected yews was made from the number and location of known infected trees. These trees are the only known trees found during an extensive inventory and observations over the past 20 years in stands where POC has been infected for many years.

In response to your question regarding what constitutes a "short time frame:" We consider a "short time frame" to be one which is too short to monitor and assess changes in wildlife populations and distributions occurring in response to yew harvest. The time frame needed to assess such changes would be variable, depending on species characteristics and intensity of monitoring, but would be longer than the five-year time frame of this EIS.

The error in the table on page III-86 (murrelet locations) has been corrected in the FEIS. (See page III-82 of the FEIS.) We have also added the Oregon Caves to the list of National Parks in Table D-3 in Appendix D.

In your letter you questioned what exactly constitutes "an acceptable threshold level," and how this level was developed. Discussion of threshold levels will be found on page III-59 (see "Measures of Forest Health"), page III-60 (see "Role of Change") and page IV-72 of the FEIS.

In regards to your question about the use of the term "management area" on page II-61 of the draft: A definition is included under "local management area" in the "Terms to Know" section on page II-56 of the DEIS.

You expressed concern about possible yew harvest on the Siskiyou National Forest. The decision to harvest yew on any particular forest will be decided by the Forest Supervisor; site-specific NEPA analyses will be necessary prior to any decision or action on any specific yew sale.

The stump-sprouting rates that we use are the best available information we have at this time. We are using the sprouting study results primarily to acknowledge that only a portion of the stumps will sprout - not all of them. The study occurred on 12 timber sale units with 100 randomly chosen stumps per unit. We are not using 69 percent as a hard number, but a base to show that a proportion of the stumps will sprout and others will not. Sprouting percentages will vary by site. This is acknowledged in the analysis (Landscape Patterns - Chapter IV - Indirect Effects). The sprouting study was carried out in clearcut units, and showed an average of 69 percent stump sprouting success rate. Yew harvested outside of timber sale units may have higher sprouting percentages due to shading of the stump. Also, stump sprouting in timber sale units will be supplemented by planting.

You find it absurd that the USFS is not charging for yew bark and wonder why not? Currently the Forest Service is offering yew bark for sale to qualified buyers. Before the Yew Act of 1992 that allowed the Forest Service to charge for the yew bark, the agency offered yew bark under a research authority as stated in the DEIS. Under the agreement with Bristol-Myers Squibb Company, the Forest Service was reimbursed for the costs involved in providing the bark, preparing this EIS, and for Pacific yew research projects.

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P. O. BOX 25047
DENVER, CO 80225-0047

In regard to your comment about the use of "could resprout" and "should resprout" on page IV-58 of the DEIS, the wording has been made uniform and changed to "should" throughout.

On page three of your letter you state, "I disagree that other midstory species may be able to substitute for yew structurally.": Depending on the area, species that will contribute to midstory vegetation will vary. Although they are obviously not structurally identical to Pacific yew, other species can contribute some of the same functions as yew such as providing understory roosting sites, cover, and travel pathways for small animals. For example, MacArthur and MacArthur (1961; see Appendix J) found that multilayered forest habitats supported more diverse bird communities and Carey (1991; see Appendix J) reported that some arboreal mammals rely on a closed and layered canopy.

You expressed concern about the use of the term, "highly speculative" in the draft EIS on page IV-65, paragraph 3. This phrase has been removed. Our intention was to show that the analysis of impacts to the ecosystem was based on a number of assumptions drawn from existing research and experience with other species as well as professional judgements.

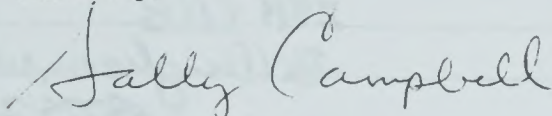
In response to your questions regarding the Oregon Coast overstory removal study: In the absence of studies specifically directed at effects of removing a portion of Pacific yew or other midstory species, a reasoned judgement was made using information from the overstory removal study. A partial overstory removal would likely have greater effects on microclimate (and greater overall effects, as a result) than removing a similar percentage of an understory species. It would then be reasonable to conclude that for most species, in most areas, the removal of 50 percent of the yew from an area would pose a fairly low risk of harming other species present.

Also on page three of your letter you state, "I challenge the assumption that moose winter range would be better off under Alternatives C-G2 than under Alternatives A-B. Display your method of analysis please." There was no assumption that moose winter range would necessarily be better off with Alternatives C-G2 than under Alternatives A-B. You need to read that paragraph carefully. There are qualifications stated that are important in understanding this. Under certain, very limited conditions, and with only light yew harvest, there could possibly be some improvement in winter range condition. You should also note the mitigation measures for moose winter range in Chapter II. Under the Nez Perce Forest Plan, the primary focus of management on MA21 lands is moose winter range. The yew EIS explicitly maintains that focus.

In summary: 1) In areas where Pacific yew has been identified as an important component of moose winter range (i.e., parts of the Nez Perce NF), mitigation measures would ensure that moose winter range habitat is not degraded, and 2) There are certain, limited conditions under which winter range conditions might be slightly improved.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

A handwritten signature in cursive script that reads "Sally Campbell". The signature is written in dark ink and is positioned above the printed name and title.

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#42 30393

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR 97208-3623

5793
Kaylene McCann
28H Ellis
Bellingham, WA
98225-2624

I would like to comment on the Pacific Yew EIS. Although Bristol-Meyers Squibb has announced that no Yew harvests from public lands will be necessary in 1993, limits must be in place if this and other companies turn again to our ancient forests for drug sources.

It is imperative that we maintain the irreplaceable gem of our intact old-growth forests. We must also maintain the integrity of Pacific Yew systems in areas previously logged. It is more important that we preserve the ability of the ecosystem to regenerate itself than to hurriedly reap a temporary reward.

The balance in favor of preserving our assets is much greater in light of recent developments in alternative sources of Taxol.

Sincerely,
Kaylene McCann



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Kaylene McCaw
2811 Ellis
Bellingham, WA 98225-2624

Dear Ms. McCaw,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the preservation of old growth systems and Pacific yew ecosystems.

As you mentioned, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

Sally J. Campbell
Leader, Pacific Yew EIS Team



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#43 30493

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? No

Why or why not? ALTERNATIVE G1 HARVESTS MORE YEW THAN IS NECESSARY. PAGE S-22 (TABLE S-1) UNDER "HEALTH-RELATED" INDICATES THAT "ADEQUATE ACCESS" IS PROVIDED BY ALTERNATIVES "C" THEN "G2". SO WHY HARVEST MORE THAN THE ADEQUATE MINIMUM? ACCORDING TO PAGE III-107, BRISTOL-MYERS SQUIBB ONLY NEEDS 830,000 LBS FOR 1993. THIS IS EVEN LESS THAN THE 1.2 TO 1.8 MILLION POUNDS (SEE ~~PAGE~~ PAGE S-22) THAT THE LOWER IMPACT ALTERNATIVE "C" PROVIDES. AGAIN, WHY HARVEST MORE?

I prefer Alternative C because: IN ADDITION TO ABOVE COMMENTS, ALTERNATIVE C PROVIDES THE LEAST IMPACT TO SPOTTED OWL HABITAT (AMONG ALL "ADEQUATE ACCESS" ALTERNATIVES) - SEE PAGE S-30. ACCORDING TO PG. S-26, ALTERNATIVE "C" DOES NOT HAVE A MAJOR IMPACT ON GENETIC VARIATION AS ^{DOES} G-1, THUS INSURING SUSTAINABILITY OF YEW SPECIES. (SEE BELOW*)

What other comments do you have?

PAGE III-57 DOES NOT PROVIDE ~~AN~~ AN ADEQUATE EXPLANATION, IN FACT NO EXPLANATION, OF HOW YEW HARVEST WILL AFFECT ITS ASSOCIATED MYCORRHIZAL FUNGI, THUS THE FUTURE RE-ESTABLISHMENT OF YEW IN THOSE AREAS.

* THE LAST SENTENCE ON PAGE S-28 SEEMS IN CONFLICT WITH THE LAST SENTENCE ON PAGE S-26. WHICH IS CORRECT?

(Please Print)

Name: DENNIS SHERWOOD ID# (from label) 2909

Organization:

Address: 7215 90TH ST N.W.

City: Gig HARBOR

State/Province: WA.

Zip Code: 98332

Country:

FINALLY, I COULD NOT FIND ANY EXPLANATION WITHIN THE DEIS WHY G1 IS THE "PREFERRED" ALTERNATIVE. WHAT EXACTLY IS THE RATIONALE FOR THIS DECISION/POSITION?

Pacific Yew EIS
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United States
Department of
Agriculture

Forest
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Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Dennis Sherwood
7215 90th St. NW
Gig Harbor, WA 98332

Dear Mr. Sherwood,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments regarding proposed Alternatives C and G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for wild yew from federal lands. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

You state that there is not an adequate explanation of how yew harvest will affect its associated mycorrhizal fungi and thus future re-establishment of yew in those areas: Our discussion of the impacts to mycorrhizae and other microorganisms is very general due to little or no specific information; these general conclusions are based on our knowledge of other species and the effects of activities on them and their associated microorganisms. Residual yew, present on all sites, should maintain mycorrhizae populations.

You also ask about a seeming conflict with the last sentence on page S-28 and the last sentence on page S-26: We do not find a conflict between those two sentences; it may be helpful for you to read the full discussion on Effects to Biodiversity (page IV-69 of the FEIS) and genetics (page IV-29 of the FEIS). Alternative G1 was identified as the preferred for several reasons, including providing the agencies with flexibility to enter both timber sale and non-timber sale areas, ability to respond quickly to a large increase in demand, and capability to harvest yew with the greatest amount of economic efficiency.

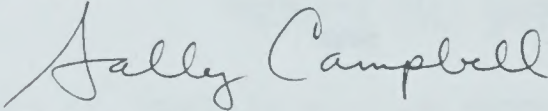


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Again, thank you for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#44 30493

March 1, 1993

Dear Pacific Yew EIS team,

I am writing in response to the Pacific Yew EIS which I have just studied. First let me say that the preponderance of the evidence in the report does NOT support the preferred alternative G1,

Alt. G1 poses a significantly higher risk to the ecosystem. i.e. soils, wildlife, and E species, Spotted Owl, and the reducing of yew population connectivity. In addition, more roads would be needed with corresponding costs to the ecosystem. The economic viability of more roads also would be in doubt. Alt. G1 also lacks a minimum TPA provision reducing seed production sources especially in sparse population areas.

I support an alternative that provides an adequate supply of raw material for the treatment of cancer patients. From Table S-1 Alternative C would provide for an adequate supply of taxol. As other sources of taxol become available Alternative B would provide an adequate supply of bark.

Recent literature suggests that a drug similar to taxol will soon be available from European yew. This substance would be extracted from a larger part of the plant and would be more economical to produce. I can foresee that in less than five years Pacific Yew will be less desirable for economic reasons.

In summary I would support a combination of Alternative C for the next 2-3 years followed by Alternative B as Pacific Yew is Phased out as a source of taxol.

Sincerely,

Mike Lazzari

Mike Lazzari #3673
570 Prohaska Road
Friday Harbor, WA 98250
206 378 2514



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Mike Lazzari
570 Prohaska Rd.
Friday Harbor, WA 98250

Dear Mr. Lazzari,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We have noted your comments about Alternatives B and C.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes. Like you, we expect that taxol, or related drugs, will be available commercially from other sources in the near future.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#45 30893

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? no

Why or why not? no consideration for commercially produced yew trees or production of taxol from species of yew other than Pacific Yew. Both are great sources of taxol not considered in this EIS.

I prefer Alternative B because: it makes use of yews that might otherwise be wasted. It probably provides enough yew bark considering the present use of other taxol sources

What other comments do you have? A well done & easy to read Draft EIS. Thank you!

(Please Print)

Name: HILDA SKOTT ID# (from label) ?
Organization: Tahara Audubon Society
Address: Box 88631
City: STEILACOOM WA
State/Province: WA Zip Code: 98388
Country: USA

Pacific Yew EIS
Draft



United States
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Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Hilda Skott
Box 88631
Steilacoom, WA 98338

Dear Ms. Skott,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments regarding Alternative B.

In response to your comments about the production of taxol from other yew species or from commercially produced yew: The purpose of this environmental impact statement and the accompanying decision is to propose a program of harvest for Pacific yew from federal lands while there is still a need for taxol from wild yew. Other methods of production of taxol are beyond the scope of this document.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

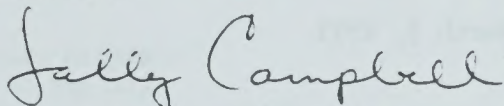


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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#46 30893

Norman Michaels
HC 60 Box 117
Idleld Park, OR 97447

March 3, 1993

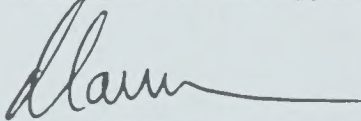
Pacific Yew EIS
USDA Forest Service
PO Box 3623
Portland, OR 97208-3623

The following are my comments regarding the Draft EIS on the management of Pacific Yew. These comments are given with the understanding that BMS is apparently able to synthesize Taxol, and therefore the demand for plant material from Pacific yew will probably be greatly curtailed.

First, your assumption that reforestation of Pacific Yew will not occur with Alternative A is incorrect. Pacific Yew has become a public issue in and of itself as a component of natural diversity, and it is recognized as a valuable species for wildlife. The propagation techniques are maturing rapidly, affording us the opportunity to readily obtain seedlings. Because of these factors, seedlings can be produced economically on a production basis, and there will be some level of demand for Pacific Yew seedlings to meet a variety of land management objectives. You need to change your assumption in Alternative A to recognize that some reforestation of Pacific Yew will occur in the absence of utilization of Pacific Yew.

Alternative B is the most sensible alternative, you should adopt an alternative with the theme that harvest of Pacific Yew occurs only in areas which are to have regeneration harvest activities. Pacific Yew should not be harvested, and it should be protected, in areas where harvest activities are not designed for regeneration. This will provide for an orderly regeneration of Pacific Yew, and will preserve a wide variety of age and size classes throughout the landscape affected. This will also provide for harvest of plant material for the production of Taxol if that material continues to be in demand by BMS or other interests.

Thank you for the opportunity to contribute to your process.



Norman Michaels



United States
Department of
Agriculture

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Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Norman Michaels
HC 60 Box 117
Idleyld Park, OR 97447

Dear Mr. Michaels,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives A and B. We noted your opinion that Alternative B is the most sensible alternative.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In regard to your comments regarding Alternative A: We acknowledge that yew will probably be planted regardless of what this EIS allows for Alternative A. However, Alternative A does not require planting as do the other alternatives, other than that required by current laws and forest and resource management plans.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL

Leader, Pacific Yew EIS Team



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The Resources Agency

#47

30893

Pete Wilson
Governor



Douglas P. Wheeler
Secretary

of California

California Conservation Corps • Department of Boating & Waterways • Department of Conservation
Department of Fish & Game • Department of Forestry & Fire Protection • Department of Parks & Recreation • Department of Water Resources

March 5, 1993

USDA - Forest Service
Pacific Yew EIS Team Leader
Attn: Ms. Sally Campbell
P. O. Box 3623
Portland, OR 97208-3623

Dear Ms. Campbell:

The State has reviewed the Draft Environmental Impact Statement, Pacific Yew, on federal lands, in the State of California, submitted through the Office of Planning and Research.

We coordinated review of this document with the Integrated Waste Management, and State Water Resources Control Boards; the California Coastal, Native American Heritage, and State Lands Commissions; and the Departments of Boating and Waterways, Conservation, Fish and Game, Food and Agriculture, Forestry and Fire Protection, Health Services, Parks and Recreation, and Transportation.

None of the above-listed reviewers has provided a comment regarding this proposed project. Consequently, the State will have no comments or recommendations to offer.

Thank you for providing an opportunity to review this project.

Sincerely,

for Nadell A. Gayon
Carol Whiteside
Assistant Secretary,
Intergovernmental Relations

cc: Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814
(SCH 93014015)

The Resources Building Sacramento, CA 95814 (916) 653-5656 FAX (916) 653-8102

California Coastal Commission • California Tahoe Conservancy • Colorado River Board of California
Energy Resources, Conservation & Development Commission • San Francisco Bay Conservation & Development Commission
State Coastal Conservancy • State Lands Commission • State Reclamation Board

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88802 848

No response to letter # 47.

#48 30893

March 1, 1993

Stephen J. Posavatz
317 W. Broadway #113
Eugene, OR 97401

Dear Sally:

I write you to express my deep concern for the future of the Yew tree and all it represents. I realize you have a great burden weighing the health of the Northwest's forests against the health of those stricken with cancer, but I feel that a fair compromise can be reached.

I am not some urban based radical environmentalist extending my crusade from whales, to spotted owls, to yew trees. I have a wide breadth of experience in relevant areas which I think makes my insights both legitimate and unique.

First of all I am a bowmaker. I make both yewwood long bows and indian style flat bows. In the pursuit of materials I have closely inspected thousands of yew trees over the past twelve years. Because of the gnarled twisted nature of the yew only a few trees in a thousand are worthy bow wood. I have searched in California; The sierras, the coast ranges, and the Klamath mountains, in Oregon; the Siskiyou, the blue mountains, the coast range and the cascades, in Washington; the cascades, the Okanogan and Kettle ranges, and I have done some searching in the rocky mountains of Idaho and Montana. I have even searched unsuccessfully in the yewwood mountains of West Virginia for a billet of Canadian yew (*Taxus Canadensis*) large enough to make a bow. I would like to stress the fact that in the past twelve years I have harvested enough yew to last the rest of my life and therefore there exists no conflict of interest.

Second of all I am a timber stand examiner and have worked extensively throughout the National Forests of Oregon and Washington. In this capacity I have developed an understanding of biodiversity, forest succession, forest pathogens, the impact and implementation of various forest management practices, soil quality, wildlife habitat, riparian sensitivity, etc..etc...

Thirdly I have done both treeplanting and stocking surveys throughout Oregon, Washington, Montana, and Idaho. And through this activity I have a good understanding of successful planting and propagation as well as the hazards of improper tree site selection and faulty planting techniques. I have had no luck in transplanting yew trees.

Lastly I spend my winters as a carpenter and have come to terms with the balance which must exist between the environment and the need for forest products.

I give you this background not to "blow my own horn", but to let you know I have been giving this tree careful study for the past twelve years and have come to certain conclusions.

1.) The yew does not grow back from the stump. While the yew does often send up pilot shoots after cutting, rarely do cut trees survive the first summer's heat.

2.) The yew needs an old growth canopy being very shade tolerant and very sun sensitive. The healthy yew has a glossy deep green foliage. Its health is greatly affected by any overstory removal as the tree becomes chlorotic turning yellow/green from overstory removal to a purple/brown as it slowly dies from sun exposure in a clear cut.

(1)

3.) The yew is primarily a riparian tree and should be exempt from intensive management and protected as an integral element of a healthy watershed, especially with the increasing concern for the salmon. In most of its territory the yew only grows in drainages and swampy areas. Throughout the western cascades there runs a belt of yew growth around 4000 feet where it does grow with out surface water, but in the majority of its territory it seldom gets fifty yards from a creek and if it does it rarely grows larger than a bush.

4.) The Yew is an important wildlife forage resource. It is very common to find bear scratches in female yew trees as the bears and many birds feed on the late summer berries. They are quite edible and are very sweet. Also woodpeckers and flickers frequent the yew groves to drill small holes which bleed and attract insects which they feed upon.

5.) The yew tends to grow in small groves and because of its dense foliage draping all the way to the ground it creates an excellent thermal blanket to protect deer and especially elk from the heat of summer. AS many bowhunters know if you want to find big game during late summer's bow season stalk the yew thickets and you will locate whole herds of elk.

6.) The Yew is incredibly slow growing and long lived. This is a well known fact, but to illustrate this point a friend of mine cut a yew in the Rouge National Forest near Medford Oregon which had 112 growth rings per inch (incredible bow wood).

7.) As spotted owls and marbled murrelets are indicator species to the integrity and bio-diversity of the oldgrowth ecosystem so too is the yew tree. Like many vanishing and endangered forbs the yew is dependent upon the towering old growth douglas fir canopy for its health protection and survival.

8.) The yew tree has been shamelessly exploited for a hundred years by the forest service. Until recently it was considered a trash tree. Even today on the stand exam data card it is coded as a #4 (cull tree). The yew has all but disappeared from private forest as it was extensively cut for its use as fence posts. Up until a few years ago many ranger districts sold yew cutting permits which allowed the user to take forty trees for ten dollars, or sold the trees for a quarter a piece. In 1986 & 1987 when I bought these permits I only intended to harvest less than ten trees. The forest service told me to take all forty and use them for fire wood. I did not!

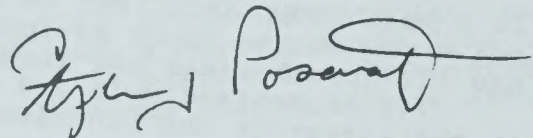
9.) The taxol varies greatly from tree to tree and from area to area. If the naturally occuring yew was radically exploited in lieu of future tree plantations such as Weyerhaeuser's Aurora nursery site, we may find the cultivated taxol inferior. Years ago the tried to cultivate ginseng in the east and found it very inferior to the wild. In fact the highest price was paid for the roots from the northern extent of its range up as far as southern Quebec, and the lowest prices came from the roots growing in it's most southern reaches in Georgia.

10.) Taxol has shown the ability to slow down tumor growth, but there is increasing evidence (as reported last month on CNN) that the affects are often only temporary.

11.) While the yew does not do well cut from the stump, it does respond well to pruning. It was often planted and used as a topiary sculpture in formal english gardens during the middle ages.

In conclusion I must admit a long love affair with this tree. It is so very useful and to look at it you would think it as useless. It seems obvious to me that the proper management of this resource lies in the use of needles. The scientific data suggests that the needles have one-fifth the potency of the bark. One quarter of the trees lower foliage could be harvested on a five year rotation for ever. How can we even consider destroying the entire tree? The answer lies in understanding the goals and power of the multi-national pharmaceutical corporations. Recently congressman Ron Wyden attacked Bristol-Meyer-Squibb as in raking in an unfair profit on taxol from it's monopoly with the forest service. Now President Clinton is attacking these corporate giants for exploiting children's immunizations. These companies have more power and influence than many large countries. They are only interested in making the largest profits possible, not in protecting the environment or the people of the United States. I have heard recently that Bristol-Meyer is backing off from natural taxol in favor of the recently discovered synthetic form and with that news I sigh- a sigh of relief. So please consider the compromise and offer the pharmaceutical companies all the needles they need, but protect the yew trees from even us bowmakers

Yours truly



P.S. PLEASE SEND ME AN ENVIRONMENTAL IMPACT
REPORT OR ANY RELATED INFORMATION - THANKS.



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Stephen J. Posavatz
317 W. Broadway #113
Eugene, OR 97401

Dear Mr. Posavatz,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We appreciated the information and observations about yew trees.

We noted your suggestion that the proper management of this resource lies in the use of needles, not the entire tree. We carefully considered an alternative that would allow harvest of needles only from the Pacific yew tree. Please see page II-13 of the FEIS for a brief discussion of the reasons we did not complete an analysis of this alternative.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. We thank you for your concern for the role that Pacific yew plays in providing habitat for wildlife and for sharing your observations. Much needs to be learned about the species and how it functions in the ecosystems of which it is a part.

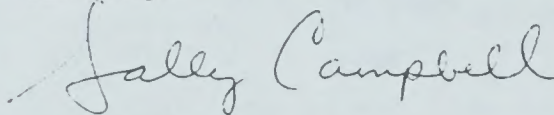


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We will pass your observations along to people such as Charles Bolsinger and Stanley Scher who have a continuing research interest in the ecological relationships of Pacific yew. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

cc: Charles Bolsinger
Stanley Scher

#49 30893

Paul Walker
Bureau of Land Management
Eugene District Office
Coast Range Resource Area
2890 Chad Drive
Eugene, OR, 97440

February 6, 1993

USDA Forest Service
Pacific Yew EIS Project
P.O. Box 3623
Portland, OR, 97208-3623



To Whom It May Concern:

Early last fall, my assignment was to investigate the possibility of establishing genetic reserves Pacific for Yew within the Coast Range Resource Area. I was also a part of the Eugene District's Yew Inventory team. Currently, no sites within the Coast Range meet the stated objectives for establishment of genetic reserves. Several different locales with many Yews do exist. (See the enclosed document). Formerly, these stands had populations of Yew that would have met the criteria had they survived or regenerated after the timber harvest. Most of these areas correspond with other existing set asides or riparian buffer zones. It is feasible to reestablish native genetic stock in these tracts. Take cuttings from residual trees, both male and female, for propagation in nurseries. Then replant the root stock back into their former range. This would insure viable native populations of Yew. It would also be helpful to identify seed trees for this purpose. This would contribute to the biodiversity of these sites. It will also be useful in the long term stabilization and enhancement of the riparian zones. Another possibility is expansion of small areas with high concentrations of Yew to insure the survival and differentiation of gene pools. This could strengthen the species by insuring its genetic diversity and ecosystem functions.

Studying the current and former distribution of Pacific Yew and their gene pools will give us a clearer understanding of the management techniques necessary to sustain them. In the process, we would better understand the northwest forest ecosystem as a whole.

The ecosystem management idea and the examination of each species for its pharmaceutical, environmental, and economic value on a truly sustained yield basis offer exciting prospects for our future. I hope to have further opportunities to contribute to the Pacific Yew and other ecosystem management projects in the future.

Sincerely,

Paul Walker

Paul Walker

5744



United States
Department of
Agriculture

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Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Paul Walker
Bureau of Land Management
2890 Chad Drive
Eugene, OR 97440

Dear Mr. Walker,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Thank you for the information concerning inventory and genetic reserves. We agree that it would be useful to expand small areas with concentrations of yew to ensure its genetic diversity and ecosystem functions. However, we believe it would be useful to supplement genetic variation with the addition of trees from other areas, particularly in small populations (less than 50).

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#50 30993

Rogue Group - Sierra Club

814 Hillview Drive
Ashland, OR 97520
March 5, 1993

5745

USDA Forest Service
Pacific Northwest Regional Office
P.O. Box 3623
Portland, OR 97208-3623

This letter is a response to your request for comments on the draft Environmental Impact Statement for The Pacific Yew, with a deadline of March 15, 1993. Now it appears that a massive harvest of yew bark will not occur at this time, probably that taxol will be supplied through synthesis.

However, we understand that you will proceed with completion of a final EIS, and that comments are still welcome. In any case the draft represents a great deal of work and will be a valuable reference source. It does give yew a better standing in the complex structure of our forests.

Following are comments for your consideration:

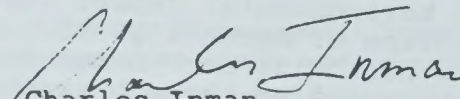
1. Table on Page II-34 needs clarification as to the amount of yew cut in the various logging categories. It shows 50% harvested in categories "Partial-Cut Sale Units" and "Non-sale Units", but in the next column it shows "no-minimum" yew left. Should not 50%, a reasonable figure, be left?
2. Also the table shows a 100% harvest of yew in "Timber Sale Units". This strips the forest of all yew, not justified to get out a reasonable amount of yew bark. Much better for balanced forest production from these areas is to limit the harvest to 50% of the yew. It will then be consistent with the limits on harvest in the other areas.
3. Also on Page II-34, there is a reference to "residual green tree reserves" but no explanation or limits were found in the text. A reference would be helpful.
4. Page II-49, Alternatives B thru G2. Contrary to the statement that, "There would be little or no impact on biodiversity under each of the action alternatives", of course there will be a severe impact, especially if 100% of the yew is taken in timber sale areas. All the more reason to hold the yew cut, anywhere, to 50% or less.
5. Page II-52. Here it is admitted that yew harvest will have an adverse effect of the forest ecosystem, but that mitigating

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measures will offset. Those measures and their effectiveness are largely unknown. Much better to eliminate such unduly hopeful statements, and keep yew harvest to a reasonable compromise level.

6. If yew bark harvest resumes, every effort should be made to encourage regrowth from stumps left. This includes leaving not only 12" of bark on the tree base, as has been done locally, but increase that to 24".

7. Yew wood has many uses, including use in musical instruments, archery bows, and small wood items. It has been valued for centuries for long-life fence posts. If yew wood becomes available thru the bark program, efforts should be made to channel it to use, not continue to trash it.


Charles Inman,
Executive Committee

Cy:Rogue River National Forest, Medford
Bureau of Land Management, Medford District



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Charles Inman
Rogue Group Sierra Club
814 Hillview Drive
Ashland, OR 97520

Dear Mr. Inman,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the proposed alternatives.

As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We considered your comments and have the following responses:

1. You asked for clarification of the information in the table on page II-34 between the 50% column and the "no-minimum" column. We have changed the "no minimum" to one tree per acre (TPA) to better reflect what we mean. The two columns represent the maximum that can be harvested on each acre from each diameter class. (50 percent) and the minimum that must be left (1 TPA). For example, if there were 50 TPA in a particular diameter class, you could harvest 25 trees and 25 trees would be left; if there were 10 TPA, you could harvest five and five trees would be left; if there was only 1 TPA, you would not harvest it - that tree would have to be left to meet the required 1 TPA.



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2. You suggest that a 100 percent harvest of yew in timber sale units should be limited to 50 percent to be consistent with the limits on harvest in the other areas. The Pacific Yew Act requires harvest of yew in timber sale areas before harvest of other timber resources. Also, one of the reasons that alternatives were designed to allow harvest of 100 percent of utilizable-sized yew in timber sale units was to minimize the extremely high costs associated with trying to protect a portion of the yew on a unit during timber harvest activities. The mitigating measures for timber sale units (See pages II-56 to II-58 of the FEIS) provide protection for yew in green tree reserves and require post-harvest regeneration. Also, yew stumps will be protected to ensure stump sprouting.

3. Please see the FEIS page II-20 for a definition of "residual green tree reserve." The definition is also in the Glossary.

4. We have noted that you disagree with our conclusions that there would be little or no impact on biodiversity under each of the action alternatives, DEIS page II-49. Please see the discussion of impacts to biodiversity in Chapter IV, page IV-69 and mitigation measures, page II-55 of the FEIS.

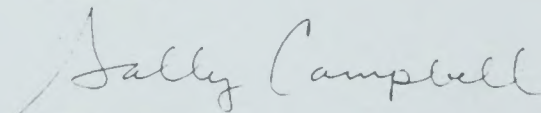
5. You state that mitigating measures and their effectiveness are largely unknown. Mitigation measures are based on the best knowledge we have to date, including research results, field observations by Forest Service and BLM scientists and land managers, and conclusions drawn from experience and research with other conifer species.

6. You suggest every effort should be made to encourage regrowth from stumps and the stump height should be increased from 12 inches to 24 inches. Stump height is based on recommendations by FS and BLM scientists; research investigating stump height and sprouting is currently underway. (See Appendix M, Research). New information may lead to revision in stump height guidelines.

7. In response to your comments regarding the uses of yew wood: Although the use of the wood is outside the scope of the EIS, it is recognized that it is the bark harvest program that is making a great deal of yew wood in log form more accessible. At the beginning of the yew harvest program, it was thought that the wood might be a valuable source of taxol. After it was determined that the taxol content of the wood was too low to be of value, peeled logs were released to those seeking them. Forest yew coordinators have made efforts to put those wanting the wood in touch with the bark collectors. This has allowed the logs to be removed from the woods as soon as they are stripped so they can be treated and cured for use without checking and splitting. Appendix L discusses the many uses of yew, especially the wood.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#51 31093

3166
David Pilz
President
Native Yew Conservation Council
P.O. Box 2238
Corvallis, OR 97339

Phone: (503) 491-3950
Fax: (503) 491-3975

March 7, 1993

Sally Campbell
Team Leader
Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Dear Sally Campbell and EIS Team Members,

This is the input of the Native Yew Conservation Council (NYCC) to the Public Response Period ending March 15, 1993 for the Draft Environmental Impact Statement (DEIS) on Pacific Yew.

I wish to personally compliment the Pacific Yew EIS team for a truly impressive effort compiling a comprehensive document for management of Pacific yews on federal lands in the Pacific Northwest. I understand many of the constraints and limitations which were imposed on your task, and I feel you did a marvelous job within those constraints. Please consider my critique accordingly, and do what you can to address our concerns.

I am writing this letter as president of NYCC, but the main points were decided by the board of NYCC after our last public meeting, January 30, 1993. Originally this response would have been a detailed critique of all aspects of the DEIS. In light of Bristol-Myers Squibb's (BMS) decision not to harvest bark from yew trees outside of timber sale units, this response will not be as detailed as originally intended. Perhaps that is appropriate, because it allows us to concentrate our comments on what we consider the vitally important issues.

We recommend three major changes in the EIS.

First, the EIS is wholly inadequate without a thorough discussion of how the FDA's decisions about drug sources affect the environment, and alternative potential actions on their part which would avoid an irretrievable commitment of national biological resources. Specifically, the FDA needs to discuss in this document the alternative of utilizing only needles as a source of taxol,

rather than felling old yew trees and stripping them of their bark. In this document, the FDA leaves yew tree (read "bark") harvest levels up to the USDA Forest Service (USFS) and USDI Bureau of Land Management (BLM). Those agencies in turn claim that they can presently only harvest bark because of FDA requirements for "Good Manufacturing Practices" and consistent "Impurity Profiles". These circuitous assertions remind me of Lewis Carroll's logic. The EIS should adopt an alternative which considers the activities which all three agencies can pursue in cooperation to bring about realistic and sustainable needle harvest for taxol production. The NYCC strongly suggested needle-only harvests during the period for public input on issues and concerns. This recommendation was hardly given a sentence in the section on "Alternatives which were considered but eliminated from further study", let alone seriously considered!

Second, in light of Bristol-Myers Squibb's decision not to request yew bark this year, NYCC has decided to propose an alternative "Y". Key features of this new alternative are as follows.

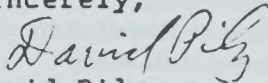
1. There should be no further planned bark harvests, and no further cutting of yew trees for bark harvest.
2. Under all federal land management plans, and under this EIS, yew trees should receive maximum (full) protection from detrimental effects of forest management activities (i.e. timber harvests, slash burning, etc.) in order to preserve future biomass production potential in the event that demand exceeds supply, or that taxanes prove more useful than anticipated, or that yews and associated organisms develop other recognized values. This means that where clearcut harvesting is still practiced, the resident yew trees should not only be left unharvested, but also protected from timber harvesting and regeneration activities. This protection would best be accomplished with silvicultural systems which utilize selective harvesting.
3. If, on a site-specific basis, other resource management activities (such as road building) will unavoidably destroy yew trees, all parts of the irrevocably sacrificed trees should be retrieved, and made available on a competitive basis to any commercial concern which wishes to utilize the material.
4. If commercial demand exceeds the availability of yew biomass in item c., above, then only sustainable needle harvest should be allowed from federal lands. Needle harvest should be encouraged from shrubby yews rather than tree-form yews.

Third, all of the alternatives in the DEIS should emphasize regeneration more strongly. A very appropriate mitigation measure for the yew bark harvesting which has already occurred, would be to reintroduce yew seedlings into much of their former range where forest management activities for timber harvest have previously eliminated them. Attempts by the USFS and BLM to institute "ecosystem management" would be enhanced by this activity as well.

The harvest of taxanes from "native" or "wild" yews is unlikely to end this decade, even if further bark harvests are not currently planned by BMS on federal forest lands. Harvests of yew biomass will undoubtedly continue on state lands, private lands, and overseas, especially in the Himalayan mountains. This EIS can, through its information and example, contribute significantly to wise utilization of yew resources elsewhere. It can also serve as a valuable precedent for appropriately managing unanticipated resource values derived from native forests. It would do so by emphasizing the value of preserving biodiversity, by discouraging single resource extraction, and by encouraging sustainable forest employment. We challenge our federal agencies to actively work towards these goals.

Thank you for your consideration.

Sincerely,



David Pilz

President

Native Yew Conservation Council

Copies to:

NYCC Board Members
Senators Mark Hatfield and Bob Packwood
Representatives Ron Wyden, Mike Kopetski, and Peter DeFazio
Kent Tresidder/BLM
Diane DeFuria/BMS
Doug Heiken
Wendell Wood/ONRC



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

David Pilz
President, Native Yew Conservation Council
PO Box 2238
Corvallis, OR 97339

Dear Dave and Members of the NYCC,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement and the compliments. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought that went into this review. We carefully considered your recommendations for three major changes in the EIS.

First, you state the EIS is "wholly inadequate without a thorough discussion of how the FDA's decisions about drug sources affect the environment, and alternative potential actions on their part which would avoid an irretrievable commitment of national biological resources." The impact of FDA's decisions about drug sources is outside the scope of this EIS.

Within your first statement you suggest a needle-only harvest. In the FEIS we added a "harvest needles only" alternative that we considered but did not analyze completely. Each of the proposed alternatives, except Alternative A, would allow for needle harvest. Please see page II-13 in the FEIS for a discussion of this alternative and why it was not analyzed in detail.

Second, in light of Bristol-Myers Squibb's decision not to request yew bark this year, you propose an alternative "Y." As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement have been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Your proposed Alternative "Y" calls for no further planned bark harvests, maximum protection for yew trees from detrimental effects of forest management, retrieving yew that would be destroyed by other activities, and a sustainable needle harvest. We find that many elements you proposed can be found in several of the alternatives considered in this EIS.

The first point, to plan no further bark harvest and no further cutting of yew trees for bark harvest is similar to Alternative A, the no action alternative included in the FEIS.



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In response to the second point, full protection for the yew from detrimental effects of forest management activities in order to preserve future biomass production potential: Currently, all alternatives (except Alternative A) require that some yew be retained in the green tree reserve; that yew smaller than utilization standards not be harvested; that as many residual trees, seedlings and stumps be protected as possible and practical during timber harvest; and that yew be replanted if necessary (see Mitigation Measures, II-55 in the FEIS).

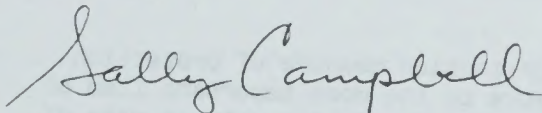
The third point is to use any yew that would otherwise be destroyed: All proposed alternatives in this EIS, except Alternative A, include the harvest of yew bark from areas where it would otherwise be destroyed. The definition of timber sale units has been revised slightly to include areas of road building, construction, prescribed fire, or similar activities to allow for harvest of yew where it would otherwise be destroyed.

The fourth point states that if demand exceeds availability of yew biomass available from areas where yew will otherwise be destroyed, that only sustainable needle harvest should be allowed: As we mentioned above, we considered a "harvest needles only" alternative, but did not analyze it in detail. Please see the FEIS page II-13.

Third, you suggest the EIS should emphasize regeneration more strongly. Mitigation measures for timber sale units require protection of residual regeneration as well as planting to achieve pre-harvest yew densities. Reintroduction of yew into areas where it has been previously eliminated was not addressed in this EIS; forest and resource management plans will address questions of long-term management of species such as Pacific yew.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. Our team has enjoyed working with the Native Yew Conservation Council. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



United States
Department of
Agriculture

Forest
Service

#52

31193

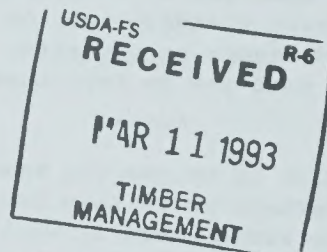
Umpqua National Forest
PO Box 1008
Roseburg, OR 97470
(503) 672-6601

REPLY TO: 2160/5150

March 10, 1993

SUBJECT: Yew DEIS

TO: Pacific Yew EIS Team Leader



Thank you for the chance to comment on this important issue facing Federal land managers in the West. I am currently the Umpqua National Forest Fuels Specialist and have been actively involved in resource management throughout the Pacific yew range for 23 years. With the recent announcement of the reduced need for naturally produced taxol and the success in the early achievement of synthesized taxol, I strongly recommend the adoption of Alternative A.

Because of the Pacific yew's highly variable range of environmental settings, let's let local resource managers manage through local resource plans. However, if Alternative B through G2 should be selected, I have several concerns with mitigation measures in timber sale units in regards to site preparation with prescribed fire. The way these measures are currently written do not recognize the importance fire has played in some of the yew's natural range and the tradeoffs to other resource concerns that a reduction of prescribed fire will cause.

Pacific yew is quite common here on the Umpqua, even on old harvest units that were high intensity burns with no yew planting. Frequent fire has played an important role in its survival and establishment, otherwise it would not exist to the extent it exists today. The mitigation measures place too much emphasis on stump protection from prescribed fire when prescribed fire may actually promote seedling germination. Your own references in the DEIS from Betlejewski (1991) show a 90% yew survival rate in Southern Oregon following prescribed fires. The DEIS also states that "fire is a natural part of the ecosystem and is not inconsistent with yew management" yet goes on to severely hamper its use in the mitigation measures. I strongly support continued research on the effects of fire on Pacific yew.

Let's place less emphasis on the interim protection measure of protection of stumps from prescribed fire and focus more on the most important item of re-establishment of yew at preharvest levels at or near its natural rate of establishment. I suggest that Mitigation Measure #1 under "Tree Form Yew" and the specific "site preparation treatments" be dropped and changed to: "When examining fuel treatment alternatives for hazard reduction, site preparation, or other management objectives that treatment alternatives consider the full range of treatment alternatives (including no treatment) and how that treatment



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FS-6200-28 (7-82)



would affect yew survival and establishment. When prescribed fire is used, cool burning prescriptions will be executed that maintains duff and limit mineral soil exposure."

Daryl D. Grenz

DARYL D. GRENZ
Forest Fuels Specialist

5796



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FS-6200-28 (7-82)



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Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Daryl D. Grenz
Umpqua National Forest
PO Box 1008
Roseburg, OR 97470

Dear Mr. Grenz,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative A and suggesting changes to the mitigating measures for Alternatives B through G2 that would emphasize the importance of fire to yew and the ecosystem.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comments regarding mitigation measures: the mitigation section of concern to you has been revised slightly to emphasize that, although the site treatment options are listed in the general order of their impact on Pacific yew, the final choice of treatment will depend on site analysis and any new research results (see the FEIS page II-57). The intent of these measures is to give managers the flexibility to use a method that will be most compatible with achieving all their resource objectives for a particular site.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



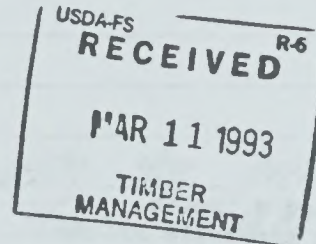
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#53 31193

1553 Brookvale Drive #1
San Jose, CA 95129
March 9, 1993

USDA Forest Service
Pacific Northwest Regional Office
333 SW First Avenue
P.O. Box 3623
Portland, OR 97208-3623



PACIFIC YEW DRAFT ENVIRONMENTAL IMPACT STATEMENT

I am writing to urge that Alternative D be selected for the Pacific Yew Final EIS.

Alternative D is the alternative from among those (D, F, G1, G2) that will "... satisfy the future production capacity of 200 kilograms of taxol" (Pacific Yew DEIS, IV-118) that will be the least stressful to the forest ecosystem and its inhabitant species, such as the northern spotted owl.

Retention of a minimum of five trees per acre (TPA) will help to promote regeneration and to maintain species connectivity. Alternatives proposing no minimum TPA are unnecessarily severe in view of the projection (cited above) that future taxol production needs can be met with Alternative D. Furthermore, the added protection of Alternatives F, G1, and G2 against no bark being available from other (i.e., private) sources is overly conservative.

Very truly yours,

A handwritten signature in cursive script that reads "Edward M. Smith".

Edward M. Smith

2104



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Edward M. Smith
1553 Brookvale Dr. #1
San Jose, CA 95129

Dear Mr. Smith,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative D.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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Kristin Anne Conrad, Anthony Antonillo Jr.
P.O. Box 898
Arcata, CA 95521

#54 31193

C

3/9/93

To: Sally Campbell -
Pacific Yew FEIS

We disagree with the preferred
alternative G1 of the Forest Service
Pacific Yew FEIS statement.

The "alternatives" which you present
in the statement do not include any
true alternatives for the protection of
the Pacific Yew.

*In Timber
Sale Units

The harvest of 100% of Yew
with * no minimum Yew left of utilizable
size (alternative C) is hardly "the
highest degree of protection for the Pacific
Yew and the ecosystem in yew harvest
areas" (Abstract)

C

As we do not know, and dare not
underestimate the value these trees may have
to future generations, we prefer the
alternative of mandatory protection of the
Pacific Yew Trees in all areas including
Timber Sale Units and Partial Cut Sale
Units with the allowance of less than
5% harvest for research purposes;
for assistance in the development of
synthetic taxol alternatives as well as
for the discovery of medicinal
compounds as yet unknown.

C

Sincerely,
Kristin Anne Conrad, Anthony Antonillo, Jr.



United States
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333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Kristin Conrad and Anthony Antoville
PO Box 898
Arcata, CA 95521

Dear Ms. Conrad and Mr. Antoville,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the proposed alternatives.

As you noted, Alternative C does not provide the highest degree of protection of Pacific yew and the ecosystem. We have corrected the FEIS to show that Alternative B gives the greatest amount of protection (See page II-23 of the FEIS).

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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AMERICAN
FOREST &
PAPER
ASSOCIATION

#55

March 8, 1993

Mr. John Lowe
USDA Forest Service
333 SW First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Dear Mr. Lowe:

The American Forest & Paper Association (AFPA)¹ is pleased to provide comment on the Pacific yew draft environmental impact statement (DEIS). AFPA is the national trade association of the forest, pulp, paper, paperboard, and wood products industry. AFPA represents member companies engaged in the growing, harvesting, and processing of wood and wood fiber, and the manufacture of pulp, paper and paperboard products from both virgin and recycled fiber, as well as solid wood products. AFPA represents a segment of industry which accounts for over 7% of the total U.S. manufacturing output. Many of our members hold federal timber sale contracts currently being utilized to provide Pacific yew bark.

GENERAL COMMENTS

AFPA strongly supports taxol collection efforts and it is our desire to see taxol made available to all who need it. There can be no greater concern. Given the extreme importance of this forest product, and its availability on public lands, any legitimate request for taxol should not go unanswered. Anyone suffering from cancer and in need of treatment would no doubt hold the same belief.

Despite the recent announcement that no taxol will be harvested from public lands in 1993, owl conservation areas, wilderness areas, research natural areas, and other special management areas designated in the forest plan should all be considered as a potential source of taxol. Although the obstacles to enter these areas may be formidable, we were disappointed that these areas were not even considered in the analysis. The slack demand for taxol from public lands in 1993 could turn out to be a temporary anomaly. Many unforeseen events could occur that would renew taxol demand from public lands. Therefore, a full range of alternatives should be examined.

¹ As of January 1, 1993, The National Forest Products Association, the American Paper Institute, and the American Forests Council merged to become the American Forest and Paper Association.

Mr. John Lowe
March 8, 1993
Page 2

A new alternative, G3, should be created to address the opportunities for, and effects of, entry into these areas, and provide guidance for proceeding to secure taxol from these areas. This alternative should also include all the other components of alternative G2.

ECONOMICS

Page II-54 of the DEIS states that for alternatives B through G2, "increased protection of yew in timber sale areas increases commercial harvesting costs resulting in slight decreases in stumpage values received by the federal government." To what extent will harvesting costs increase? What extra measures will be required of timber purchasers? Most timber operators will gladly coordinate and cooperate with yew harvest efforts, but purchasers of federal timber should not be saddled with extra work that should be required of the yew harvester. It may require extra coordination, but the regular timber sale program should not "pay" for yew harvesting costs that should be borne by the yew program. How will the measures be adjusted if demand for public sources of yew disappear?

MITIGATION MEASURES: GENETIC RESERVES

The amount of genetic reserve areas prescribed for alternatives C through G2 appear to be excessive.

Genetic reserves in timber producing areas are not needed for the following reasons:

- 1) With all the lands set aside within the BLM and the National Forest System, there should be no need to create yet another category of reserved lands.
- 2) Pacific yew is a sprouting species which will retain genetic material on the site.
- 3) Reforestation efforts will be pursued following harvest, maintaining a genetic mix.
- 4) Since Bristol-Myers Squibb has announced they do not intend to harvest yew from federal lands in 1993, the assumptions of anticipated demand for taxol in the DEIS are no longer valid. With reduced demand and less harvesting than anticipated, there is even less need and no justification for establishing genetic reserves.

Mr. John Lowe
March 8, 1993
Page 3

- 5) Statements in chapter IV, pages 4 and 5 emphasize that timber harvest will not completely remove Pacific yew, and that yew will be regenerated and protected as a recognized tree species under forest and resource management plans. These statements support the argument against the need for genetic reserves.

All these factors combined will assure that no irreversible or irretrievable adverse effects to the genetic resource will occur even without the establishment of genetic reserves.

PERCEPTIONS

On page III-100 of the DEIS, in the discussion on "perceptions", we agree with the statement: "residents of metropolitan areas whose livelihoods are not directly or noticeably linked to the extraction of natural resources are more commonly viewed as favoring environmental concerns." We do not agree with the statement "Environmentalists are concerned about their neighbor's jobs". This has not been our experience and we would like to see your evidence supporting this conclusion. We do, however, agree with the statement "mill workers are frequently among the first to note their concern for the environment." People dependent on their livelihood from the forests recognize the need to conserve and use the resource wisely.

PACIFIC YEW HARVEST AND TIMBER HARVEST (PAGE IV-110)

The DEIS predicts that "Pacific yew harvest may delay timber harvest if the yew is not harvested first in a timely manner." We have several concerns. Much of the taxol will be derived from areas under contract to timber purchasers. Purchasers operate under specific contractual requirements and could be financially damaged if operations are delayed. Because of various environmental concerns, many timber sale contracts require harvesting operations to be condensed into a very short operating season, sometimes only several weeks in a calendar year. Most timber sale contracts require midpoint and periodic payments whether or not timber is harvested. If purchasers are not able to operate during these short operating seasons, they will be financially damaged.

The timber industry realizes the importance of the need for taxol and will cooperate with efforts to ensure its timely collection, but the rights of timber sale contract holders must be protected. In developing new timber sale contracts, the collection of Pacific yew bark should be scheduled before the timber sale is advertised.

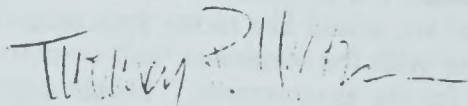
Mr. John Lowe
March 8, 1993
Page 4

SUMMARY

Taxol from the Pacific yew is a forest product valuable to society. The American Forest & Paper Association strongly supports efforts to collect taxol from public lands. We see no need to set aside more public lands in the form of genetic reserves. Many other factors will ensure long term supply, availability, and protection of the genetic resource. Many of our members hold timber sale contracts on areas from which taxol is collected. Although there is some potential for conflicts between yew harvesters and timber harvesters, we feel these problems can be minimized with good planning on the part of the government, and we expect timber purchasers will cooperate.

Thank you for the opportunity to comment on this important issue.

Sincerely yours,



Thomas P. Hoffman
National Manager,
Federal Timber Sales Program
American Forest & Paper Association



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Thomas P. Hoffman
American Forest & Paper Association
1250 Connecticut Avenue, N.W.
Washington, DC 20036

Dear Mr. Hoffman,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We studied all the comments and made several changes in the final EIS.

In response to your suggestion that Owl Conservation Areas, wilderness areas, Research Natural Areas, and other special management areas should be designated for yew harvest, despite the recent announcement that no taxol will be harvested from public lands in 1993: We considered your proposal to create another alternative, G3, that would allow yew harvest for taxol in lands set aside for the management of owls, wilderness, and natural areas, but did not include it as a proposed alternative in the FEIS. Yew harvest in wilderness, Research Natural Areas, and other special management areas was considered, but dropped from further consideration for reasons documented in the DEIS (see pages II-9 and II-12 of the FEIS). We analyzed yew harvest impacts in Owl Conservation Areas as a part of Alternative G2.

We find the range of alternatives broad enough to allow for the future need for taxol without entering these areas and remains reasonable within the scope of the proposed action (see pages I-2 to I-5 of the FEIS). The alternatives range from no harvest of yew to harvesting over five million pounds of bark a year. This range allows for response to a wide range of demand levels.

In response to your comment regarding page II-54 of the DEIS and your questions as to what extent harvesting costs will increase and what extra measures will be required of timber purchasers: We are unable to calculate exact increases in harvesting costs. The following will be required from timber sale purchasers: To the extent that the requirements of the Pacific Yew Act are still binding, preharvesting of yew in timber sales is required. This can be accomplished prior to the sale; just prior to logging; or concurrent with logging. Recent efforts to harvest yew have concentrated on previously sold timber sale units. In the future, there should be minimal conflicts if yew can be successfully removed prior to selling the timber. We clarified the cumulative effects on stumpage values to show that the biggest cost increase will be from site preparation and fuel reduction. There should be only a minimal increase in cost to the timber sale operator.



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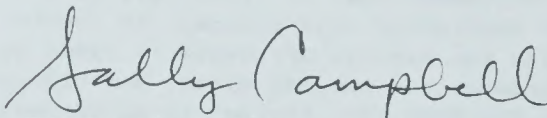
In response to your comment that the amount of genetic reserve areas prescribed for Alternatives C through G2 appears to be excessive: The genetic characteristics of Pacific yew are different from other conifers; there is more population differentiation and populations are all somewhat unique. Many small reserves offer replication in case of fire and theft and assure maintaining the variation between populations (see page III-33 of the FEIS). You're right, Pacific yew is a sprouting species, but we are also concerned about mating, seed production, and genetic variation in future populations. Genetic reserves will only be established where yew harvesting occurs outside of timber sale units.

We noted your responses to social perceptions on page III-100 of the DEIS and your request for evidence supporting the conclusion that "Environmentalists are concerned about their neighbor's jobs."

You state the rights of timber sale contract holders must be protected and collection of Pacific yew bark should be scheduled before the timber sale is advertised: According to the Pacific Yew Act of 1992, Pacific yew will be harvested before other species are harvested in a timber sale unit.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#56 31293



Sierra Club

Oregon Chapter

12 March, 1993

To: Sally Campbell
Pacific Yew EIS Leader
USDA Forest Service
Pacific Northwest Region
333 SW First Avenue
PO Box 3623
Portland, Oregon 97208

RE: Comments on the Pacific Yew Draft Environmental Impact Statement

In order to insure the continued viability of the Pacific Yew as a species a plan that balances human demands for taxol production with the need to preserve the last remaining yew populations in the Pacific Northwest needs to be developed. Bristol-Myers' recently announced decision to discontinue the harvest of yew trees during 1993 because of the rapid progress made in producing a synthetic form of the drug does not negate the need for an environmental impact statement, as stated by the U. S. Forest Service, but signals the need for a redirection in focus. Bristol-Myers announcement radically impacts the purpose and need for this Environmental Impact Statement and should cause a reassessment of the scope of the project.

Despite Bristol-Myers' announcement, the Forest Service is proceeding with bark stripping outside of already scheduled timber sale areas, an action currently being appealed by the Oregon Natural Resources Council. Before harvesting continues, the U.S. Forest Service needs to develop policies that take into consideration new yew collection and taxol producing technologies. Undoubtedly even though Bristol-Myers claims to no longer need to harvest yew trees, there will be other parties interested in obtaining yew bark and/or needles and twigs. This makes it imperative that a plan be implemented which will preserve the remaining yew population and insure its continuation as a species while meeting ongoing human demands for taxol. This plan should also fully analyze an alternative that will sustain annual yew biomass collection in the ancient forests of the Pacific Northwest. The Oregon Chapter of the Sierra Club thus supports the creation of a plan that would:

- Limit harvesting to 50% of yew in timber sale units only. A plan should be adopted that would utilize yew that might otherwise be wasted and would result in the least negative impact on the health of the forest and threatened and endangered species.
- Provide for sustained yield in accordance with the National Forest Management Act.
- Include a provision for the protection of significant concentrations of yew discovered on any public forest land. Clearcutting of these areas should be prohibited and only very selective logging allowed.
- Ban all slash, pile, and broadcast burning in forested areas that contain yew trees; burning

not only destroys the bark of leftover trees but prevents stumps from sprouting.

- Include provisions for maintaining genetic diversity of the yew. In order to ensure that the genetic diversity of the species is maintained, the Sierra Club would support a provision that provides for the establishment of genetic diversity areas in harvest zones to protect the gene pool and maintain connectivity between yew populations throughout the landscape.

- Provide for a more precise inventory to be made of existing yew populations of harvestable size in order to plan accurately for future maintenance of the species.

- Include provisions to discourage illegal theft of yew bark. The EIS states that while 825,000 pounds were harvested legally during 1991, 300,000 pounds were illegally stolen during the same period. A stronger penalty and/or deterrence for theft than is currently being imposed is clearly needed.

- Offer incentives for research into development of taxol through alternative sources such as synthesis, cell culture, nursery propagation, heartwood extraction, selective pruning, and needle extraction, all of which would reduce the negative impact of yew harvesting on the forest populations.

The Sierra Club feels that alternatives to bark harvesting that will aid in the production of taxol should be explored as well. Collectors with the capability to obtain taxol from yew needs and branches should be given priority over collectors who only utilize the bark. Companies that can extract other taxanes or analogues of taxol necessary for partial synthesis should be given priority over those who are unable to process taxol from the entire tree or only have the capability to process the bark.

- Continue to make yew available to those who can make use of the wood in small quantities for the crafting of bows, music instruments, and similar items. Yew should not be harvested specifically for fence posts.

- Create jobs as a byproduct of necessary yew harvest instead of creating jobs by harvesting yew.

The Sierra Club envisions a final EIS that gives particular emphasis to the careful management and protection of the Pacific Yew and its genetic diversity. The Pacific Yew has spiritual, cultural, and historical value that should be respected and balanced with its taxane virtues. It is estimated that yew trees have dwelled on this continent for 100 to 200 million years. The yew's medicinal and spiritual value was recognized long ago by Native Americans who revered the tree as a source of strength and renewal. Since white men invaded the Pacific Northwest, however, 95% of the yew population has been eliminated. Many of the remaining trees are found in old growth forests, whose future is also uncertain. With the discovery of the medicinal value of taxol, the remaining 5% of the yew population, and thus the species itself, has come under the threat of extinction.

The presence of the yew is an indication of the state of health of the entire forest ecosystem. Yew trees are an important source of winter food for herbivores such as elk, moose, and deer as well as seed-eating birds and squirrels; they provide canopy for invertebrates and roosting habitat for spotted owls and other birds. The yew's root system provides habitat for soil anthropoids such as beetles, crickets, and mites, and assures a symbiotic relationship with beneficial fungi. The Sierra Club supports a plan would guarantee taxol production but would also include provisions that would protect the viability of the yew species as it occurs in nature.

Questions about, or responses to, these comments should be addressed to:

Susanne Carter,
Yew Project Leader
Sierra Club, Oregon Chapter
1413 SE Hawthorn Blvd.
Portland, Oregon 97214



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Susanne Carter,
Yew Project Leader
Sierra Club, Oregon Chapter
1413 SE Hawthorne Blvd.
Portland, OR 97214

Dear Ms. Carter,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. After reviewing all the comments, we made several changes in the final Environmental Impact Statement.

We will try to answer some of your concerns about the balances we need to strike between the human demands for taxol and the need to preserve yew populations in the Pacific Northwest.

In response to your comment that Bristol-Myers Squibb's recent decision to use other sources rather than yew from federal lands does not negate the need for an environmental impact statement: We agree. We find the original proposed purpose and need statement still valid; only the magnitude of the proposed action has changed. We clarified the proposed action and need statement to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

In regard to your comment that the Forest Service is proceeding with bark stripping outside of already scheduled timber sale areas: Although several environmental assessments were prepared for this possibility, yew is not being harvested outside timber sale areas. During the 1993 bark harvesting season, yew will only be harvested where it would otherwise be destroyed in timber sale units and from sale areas not completed last year; this harvest allows federal agencies to comply with the Pacific Yew Act of 1992.

In response to your comment that it is "imperative that a plan be implemented which will preserve the remaining yew population and insure its continuation as a species while meeting ongoing human demands for taxol:" We agree. All of the alternatives, except Alternative A, contain provisions for minimizing the adverse effects from timber harvest and yew harvest (see pages II-23 to II-38 of the FEIS). The mitigation measures (see pages II-55 to II-66 of the FEIS) are also designed to ensure the continuation of yew as a species. Both the alternatives and the mitigating measures are fashioned very closely after "An Interim Guide to the Conservation and Management of Pacific Yew," as revised April 1993; it was developed to ensure sustainability of the species.



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We have noted your suggestion to limit harvesting to 50 percent of yew in timber sale units only: Currently, all alternatives (except Alternative A) require that some yew be retained in the green tree reserve; that yew smaller than utilization standards not be harvested; and that as many residual trees, seedlings and stumps be protected as possible and practical during timber harvest. See the mitigation measures for Alternative B. (See page II-55 of the FEIS.) All alternatives meet sustained yield as defined by NFMA and the Multiple-Use Sustained Yield Act of 1960.

You suggest a provision for the protection of significant concentrations of yew discovered on any public forest land: Please see pages II-56 and II-61 of the FEIS.

We have also noted your suggestion that all slash, pile, and broadcast burning be banned in forested areas that contain yew trees: The mitigation measures (page II-55 of the FEIS) provide options for site preparation methods to minimize damage to yew by burning.

In regard to your suggestion that we include provisions for maintaining genetic diversity of the yew: The genetic reserve areas that are required as part of Alternatives C through G2 are designed to maintain the genetic diversity of yew. (Please see FEIS, Chapter II, Description of Alternatives and Mitigation Measures.)

Yew will be inventoried during site-specific planning for future yew harvest should it occur. Also, Pacific yew is currently included as one of the tallied species in region-wide resource inventories.

As to the problem of theft: Theft of yew trees or bark is covered under theft of government property statutes. Federal agencies have increased monitoring patrols in areas of yew concentration and where there is evidence of yew bark theft. After strict accountability standards for the collection of yew bark were implemented in 1992, bark theft decreased dramatically.

Many researchers are studying alternative methods of producing taxol. This EIS is limited to analyzing the effects of harvesting yew material for the production of taxol.

In response to several suggestions, including yours, we included a proposal for an alternative that would allow for the harvest of yew needles only, but we did not carry out a complete analysis of the impacts of this proposal. Please see the FEIS page II-13 for a description of this proposal and the reasons why we did not fully develop it. Each of the proposed alternatives allows for the collection of needles, should there be a need for them.

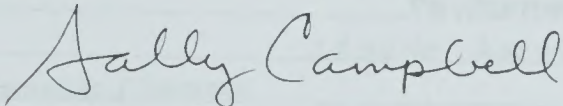
Yew will continue to be available to woodworkers and for cultural and religious purposes.

In regard to your concern about the threat of extinction and the viability of the yew: The system of genetic reserves is designed to maintain many representative gene pools of the species in a natural state. Further protection is afforded by riparian corridors, administratively withdrawn areas such as wildernesses and owl habitat areas, and the resprouting characteristics of the species.

We recognize that yew can provide important habitat components for wildlife (FEIS pages III-73 to III-85). Most of the alternatives present a low risk of affecting species that use Pacific yew (FEIS pages IV-82 to IV-86, Appendix J).

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

A handwritten signature in cursive script that reads "Sally Campbell". The signature is written in dark ink and is positioned above the printed name and title.

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#57 31293

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? _____

Why or why not? refer to enclosed sheets

I prefer Alternative _____ because: _____

same as above

What other comments do you have? _____

same as above

(Please Print)

Name: Matthew Bergvall-Mensor ID# (from label) 5798

Organization: Individual

Address: P.O. Box 10031

City: Truckee

State/Province: CA Zip Code: 96162

Country: USA

Pacific Yew EIS
Draft

Do you agree with the preferred alternative? NO
Why or why not?

This alternative could create "overharvesting" of Pacific yew, overabundance of bark/taxol, and it doesn't protect the Pacific yew and it's environment well enough. I state my reasons in the question below.

I prefer Alternative D because:

This alternative satisfies the need for the amount of bark needed, and it has less impact on the Pacific yew environment. For example, alternative D will provide 9.28 to 14.72 million pounds of bark annually. The DEIS states 2,000,000 pounds will make 130 kilograms of taxol which will be enough for 65,000 cancer patients. Furthermore, each year 21,000 women are diagnosed with ovarian cancer. This leaves 44,000 people with other related cancers to be treated. Alternative D would make the production four times to seven times that amount. Whereas, the preferred alternative (G1) would be double the highest amount of alternative D. In addition, Environmental Consequences p. IV-118 states, "Alternatives D through G2 satisfy the future production capacity of 200 kilograms of taxol ..." How much taxol do we need annually?

I feel the preferred alternative could create wanton or rampant harvesting of Pacific yew. Alternative D will require 50% per diameter class or five trees per acre in partial cut sale units. These leave trees will add to genetic and structural diversity, canopy cover, more mature trees, roasting sites, etc. For example, Environmental Consequences section (referring to Alt. D) p. IV-35 states, "Leaving five trees per acre in each size class assures minimum population is left for pollen dispersal and gene migration." In addition, p. IV-45 (same section) states, "Alternatives that leave a higher proportion of standing trees verses stumps would probably have more regeneration following fire." It protects "unique" individuals that might be in "marginal" stands. For example, Issues, Alternatives, and Comparisons (referring to Alt. F, G1, and G2) p. II-46 states "This would have a greater effect in more sparse areas where there may not be adequate numbers of sexually mature trees left following harvest as potential seed producers." In areas of Timber Sale

(TS) units where hundred percent of the yew will be harvested, I stress the importance of genetic reserves besides stream "buffers" and conservation areas. Will genetic reserves be established, if conservation areas (i.e. HCA's, OGEA, CON, OPS, etc.) are not present.

Sustainability is better addressed by alternative D. I've read the other forms of taxol production. And it is very promising. However, what will happen, if the other forms are not available for taxol production in the next two to five years? It could be ten to fifteen years or more, which I doubt will happen. Our demand in the United States will be satisfied annually by alternative D plus extra. Will there be a world market for this product? Since people in the United States are not the only ones that suffer from cancer. The French seemed to have a good product, which they are producing. In addition, Pacific yew is a very slow growing tree. If we over utilize it now, what will happen in the future? If we do not have any alternate forms.

On table II-1: Comparison of the Effects between Alternatives, alternative D has more minor or moderate effects/impacts than the preferred alternative (G1) for example row d. Genetics of Yew: effects on heterozygosity minor vs. moderate, row g. Ecosystems: low to moderate vs moderate, k. Wildlife: composite risk to wildlife in late successional forest minor vs. moderate, etc. Furthermore, I don't understand why alternative G1 would be 3.0 million (5.9-2.9) dollars cheaper for government expenditures associated with bark harvest.

Jobs will be created with this alternative but not as many as G1. Nonetheless, bark/taxol will not flood the market, which could lower the price of taxol.

Having enough bark/taxol for cancer patients is very important, but the DEIS is also addressing the protection of Pacific yew and it's ecosystem. Plus, other organisms using this atypical tree and it's environment.

What other comments do you have?

I want to stress my satisfaction on the information presented in this DEIS. It seemed to be a difficult task, since Pacific yew is such a novel tree. It spans though many different plant communities and has a diverse geographic distribution. I can't stress the importance of the physiographic provinces. For example, the Siskiyou and Sierra Nevada mountain's Pacific yew associated with old growth. I have seen Pacific yew in northwestern California and northeastern Washington while working for the government. In these areas, Pacific yew is restricted to riparian areas within old growth forests or stands with old growth characteristics. The EIS should stress these difference more strongly. For example, how an physiographic provinces in western Montana (with moose populations) and western Oregon (with Northern Spotted owl populations) are harvested will be quite different from provinces in northeastern Oregon, northeastern Washington or the Sierra Nevada mountains. I hope these differences will be approached by the separate forest and resource management plans of the Forest Service and BLM.

I'm concerned with the 100% harvest of Pacific yew in Timber Sale (TS) units especially in areas of "marginal" stands. How will genetic reserves be established? What amount of trees or acres will be considered a "marginal" stand? Will these stands be "overlooked"? The DEIS Environmental Consequences p. IV-57 (Sale Areas referring to Alternatives C-G2) states, "Yew would only be harvested in areas where it is relatively abundant and connections across the landscape would be maintained after harvest in sale areas." And before that it states (same section), "Some yew would be retained, however, in sale areas with green tree reserves." Does this refer to Timber Sale (TS) units? If so, it is a good idea.

Since Pacific yew is dioecious, both sexes will need to be reserved. It takes two to tango. Can yew be distinguished during harvesting time? Wind will carry pollen for pollination, but yew is a midstory tree. Where wind is less of a factor.

Management of Port Orford cedar root rot should restrict harvesting during the summer drought period. Zoospores can move through a water medium and infect other trees. What period of the year are zoospores present. I can't believe that washing off machinery will help for Pacific yew or Port Orford cedar.

Sensitive plants should be protected from harvesting areas with Pacific yew. Not just species that are known to be found in riparian areas, since they are given a small "buffer zone" and whatever buffer is used by a forest or resource district.

If there is an urgency for taxol. I believe a study should be done on the impact of taking needles from live trees over the Pacific yew range. It could have adverse effects on trees with 50% needles taken. It would seem reasonable that we have enough taxol products from the bark alone at present.

It's interesting in the DEIS Affected Environment (referring to Among Population Variation) p. II-28 states, "... supporting the idea that Pacific yew populations are somewhat unique and no two are identical." Just like humans. This species of tree should teach people the importance of biological diversity. For years, this tree was treated as a weed. Many pounds of bark were burned or were left to rot. Now it can prolong and save human lives.

Errors or left out in the DEIS

1. On page III-36, the DEIS states that the phloem is the transporter of water. However, I learned it is the transporter of photosynthates. The xylem or wood is the transporter of water. I was taught that trees can live for awhile after a fire (i.e. burned cambium), since water is still getting to the leaves. So that the tree can photosynthesis. In the process, produce cones for seed dispersal, before it dies (lack of photosynthates to the roots). I would not rule out that some water is transported in the phloem.

2. On page III-36, the two physiographic provinces 11 and 12 are mixed up. I would say 11 is the Modoc Plateau whereas 12 is the Sierra Nevada.

3. On page III-95 in the Northern California section, the town of Crescent City was left out in Del Norte County. I also feel that Highway "101 Corridor" should be mentioned, since Siuslaw, Siskiyou, Klamath, Six Rivers and Mendocino National Forests border along it's eastern side not to mention the BLM districts such as Coos Bay, Arcata, etc.

It's difficult to mention all the points in this DEIS, I have stressed the points, that I'm concerned about.

Lastly, I am adamantly opposed to Alternative G2, until we know more about Northern Spotted owl managed habitat.

Sincerely,

Matthew Bergvall-Mensor

Matthew Bergvall-Mensor



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Matthew Bergvall-Mensor
PO Box 10031
Truckee, CA 96162

Dear Mr. Bergvall-Mensor,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives D and G2.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In answer to your question, "will genetic reserves be established, if conservation areas...are not present?" For Alternatives C through G2 (that allow harvest both in timber sale units and outside of timber sale units), genetic reserves would be established in any drainages where harvest of Pacific yew would occur. For Alternative B (that allows harvest only in timber sale units), specific reserves would not be required; however, all areas outside of timber sale units would function as genetic reserves, including the riparian areas where yew harvest is not allowed. (See mitigation measures, page II-55, and the Genetics discussion, page IV-29, in the FEIS.)

In answer to your question why Alternative G1 would be 3.0 million dollars cheaper for government expenditures associated with bark harvest: Alternative G1 would be less expensive to implement because it does not require pre-sale examination for numbers of trees in certain size classes. Alternatives C-F require that a specified number of yew trees be maintained by diameter class which increases survey and layout costs above Alternative G1 and G2.

You mentioned the importance of physiographic provinces and that the EIS should stress these differences more strongly: As you mentioned, physiographic differences are recognized during the development of forest and resource



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management plans and during site-specific analysis. The decision whether to harvest and the method to use is made at the project level by people familiar with their particular site conditions.

In answer to your question about distinguishing the sex of yew trees and wind pollination:

1. Pacific yew has been found to have approximately a 1:1 sex ratio. Although yew harvest will not be planned according to sex, it is believed that by harvesting only a proportion of the trees on a per acre basis, that the natural sex ratio within populations will be maintained across the landscape. Any areas with unusual sex ratios, i.e., large areas of nearly pure female or pure male stands should be considered on a site specific basis.

2. Pollen dispersal distances depend on three major factors: 1) Size and density of pollen grains, average grain size for the genus Taxus is approximately 25 um in diameter, 2) the height of pollen release, and 3) wind velocity at the time of release. The understory environment in which yew grows also probably restricts pollen dispersal.

3. The likelihood of reduced pollen availability effecting sexual reproduction increases as greater proportions of yew populations are removed. The effects of different harvest levels on reproduction are assessed in the Biology section of the EIS. Yew also reproduces vegetatively and it is unknown how large of a role seedling production plays across the landscape, and how a reduction in seed production would effect this. This is discussed in more detail in the Chapter IV Biology section.

4. Yews growing in the more open environment along streams may be a significant pollen source for individuals growing in understory habitats. Pacific yew will not be harvested along riparian areas, retaining this pollen source throughout the landscape.

In response to your concerns about Port-Orford cedar mitigating measures: Under the Port-Orford cedar management plan, all activities, including harvest of trees, in areas at risk to Port-Orford cedar root disease can be restricted during wet seasons and periods of rain during dry seasons. The reason, as you point out, is because the disease can be moved and carried by zoospores in water flowing overland and by mud containing dormant spores (chlamydospores) adhering to vehicles. Restricting harvesting during the dry season, as you suggest, would be less effective in reducing spread than the same procedure during the rainy season.

Washing vehicles and machinery is part of a package of mitigation measures that has been practiced by the Forest Service in the Port-Orford cedar range for several years. Though scientific evidence is not complete, field foresters are convinced that washing of vehicles is a proven means of preventing the spread of Phytophthora lateralis in certain, specific situations.

You commented that sensitive plants should be protected from harvesting areas with Pacific yew: site-specific analysis will be required prior to any yew harvest and should reveal any threatened, endangered, or sensitive species. Site-specific mitigation measures will be designed to avoid or minimize impacts to those species.

We noted the comments you had about errors and items left out of the DEIS:

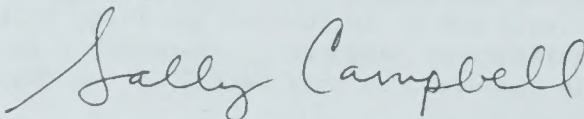
1. We looked for the reference to phloem and transport of water, page III-36, but could not find it there or nearby. You are correct, however, that phloem is the major transporter of photosynthates and xylem the transporter of water.

2. The physiographic map legend on page III-36 was revised. The Modoc Plateau is not included. Sierra Nevada is still number 11. Please see Appendix H for more information about the provinces.

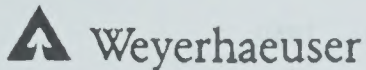
3. We deleted Table III-11 and the discussion about populations on page III-94-97 of the DEIS because the information was not immediately relevant to the effects of yew harvest.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



Corporate Headquarters
Tacoma, Washington 98477
Tel (206) 824 2345

March 12, 1993

Ms. Sally Campbell
Pacific Yew EIS Team Leader
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Portland, OR 97208-3623

| | | |
|--|-----------------------------|----------------|
| Post-It™ brand fax transmittal memo 7671 | | # of pages > 1 |
| To <i>Sally Campbell</i> | From <i>John McMahon</i> | |
| Co. <i>U.S. Forest Service</i> | Co. <i>Weyerhaeuser Co.</i> | |
| Dept. <i>Pacific Yew EIS Team</i> | Phone # <i>206-924-3559</i> | |
| Fax # <i>503-326-2469</i> | Fax # <i>206-924-3866</i> | |

Dear Ms. Campbell:

We appreciate the opportunity to comment on the extensive analysis of alternatives for the collection of Pacific Yew from federal forests in the Pacific Northwest documented in the "Pacific Yew Draft Environmental Impact Statement," January, 1993. The timeliness and thoroughness of your report is critically important given the public health requirement for dependable taxol production.

In regard to the preferred alternative G1, we would recommend that you review the level of yew bark collection needed in view of the January 25, 1993 announcement by Bristol-Meyers Squibb that they do not plan to harvest Pacific Yew bark from federal lands in 1993. The level of yew bark collection proposed in the preferred alternative appears to exceed the demand given the rate of technological development of alternative sources of taxol. Other collection alternatives requiring less dependence on partial-cuts and non-sale areas would seem to be feasible in the near future.

Weyerhaeuser's capability to propagate yew for taxol production referenced in Chapter III, page 112, of the draft EIS should be corrected to identify five nurseries and greenhouses in Washington and Oregon that are currently producing yew seedlings.

Sincerely,

J. P. McMahon
Vice-President, Timberlands
External and Regulatory Affairs
bek



United States
Department of
Agriculture

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Pacific
Northwest
Region

333 S.W. First Avenue
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Portland, OR 97208-3623

Reply To: 1950

Date:

J.P. McMahon
Vice President, Timberlands
External and Regulatory Affairs
Weyerhaeuser Co.
Tacoma, WA 98477

Dear Mr. McMahon,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative G1 and the reasons to select a different alternative.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We added the updated information you gave us about greenhouses and nurseries in Washington and Oregon to page III-103 of the FEIS.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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VIA FAX AND MAIL ON MARCH 15, 1993
13 March 1993

Sally Campbell, Team Leader
Pacific Yew EIS Team
USDA Forest Service
PO Box 3623
Portland OR 97208-3623

Subject: Comments on Pacific Yew Draft EIS.

Dear Ms. Campbell:

In my January 29, 1991 scoping letter I said that the USFS yew harvest program and "the ultimate approval of taxol as a commercially available drug are all 'connected actions' within the meaning of 40 CFR § 1508.25. 'But for' FDA approval of taxol from bark for use in clinical trials, there would not be a demand for 750,000 pounds of bark per year. The FDA should consider alternatives, such as taxol derived from needles, when approving Investigational New Drug Applications for taxol derived from sources such as bark, which have significant adverse impacts on the human environment. Alternatives considered by the Forest Service and the BLM, such as opening the market for yew needles, will not be feasible without the cooperation of the FDA and the NCI." It appears that neither the FDA nor the USFS has heeded this comment in the DEIS. The FDA has approved taxol before the EIS has even been completed, and the DEIS fails to consider an alternative that focusses on needles harvest. This EIS will not be at all adequate as a basis for harvest of yew resources until the environmental consequences of all the reasonable alternatives sources of taxol, including yew needles, are explored in an EIS.

As cooperating agencies, the FDA must consider approval of taxol derived from needles and the USFS must consider a needle-only harvest alternative. This is a reasonable alternative and must be considered pursuant to 40 CFR § 1502.14. The EIS is inadequate until such an alternative is considered.

My January 29, 1991 scoping letter also said, "Alternative sources of taxol, such as needles, have been suggested and must be explored. Yew needles not only contain taxol

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but many molecular subunits that can be converted into taxol via partial synthesis. While the prospect for total synthesis of taxol is near zero because of the prohibitive number of chemical steps required, partial synthesis appears feasible. The Forest Service and the BLM must make every effort to preserve living yew trees as a source of both taxol and these convertible taxol subunits." The DEIS should have considered at least one alternative which focussed on harvest of the needles and not the bark. This is a reasonable alternative and must be considered pursuant to 40 CFR § 1502.14. The EIS is inadequate until such an alternative is considered.

My January 29, 1991 scoping letter said, "The EIS should include alternative sets of standards and guidelines that modify short-rotation, even-age management regimes which dominate federally managed forests where Pacific yew occurs. What are the impacts if short-rotation, even-age management is not changed?" The DEIS should have considered an alternative which focussed on managing yew habitat for yew products. An alternative which prohibits clear-cutting from prime yew habitat and which considers alternatives to short-rotation even-age management must be addressed. This is a reasonable alternative and must be considered pursuant to 40 CFR § 1502.14. The EIS is inadequate until such an alternative is considered.

Please accept the following additional comments on your Draft EIS:

I-2 Clarify the underlying purpose and need for the proposed action. The DEIS says the proposed action is in response to a need for an immediate supply of bark for cancer research and treatment. In fact, Bristol-Myers Squibb (BMS) has announced that they have a large stockpile of bark which will meet their short-term needs, and in the long-term they are exploring other alternatives which do not require yew bark from federal lands. 40 CFR §§ 1502.13, 1502.10(d). As I pointed out in my February 2, 1993 letter to you, a supplemental DEIS is required pursuant to 40 CFR § 1502.9(c) because circumstances have substantially changed and the original purpose and need for the action have all but evaporated due to the announcement by BMS that they don't need yew bark from federal lands anymore.

BMS's announcement also included significant new information bearing on the proposed action. They said that they will pursue an amendment to their New Drug Application (or their Investigational New Drug Application) to allow them to use yew resources other than bark to make taxol for use on humans. The new or amended NDA will likely allow the use of taxol from needles of Pacific yew, and this new information requires a supplemental DEIS to consider a needle only alternative.

If the Forest Service plans on not completing the EIS process because of the new information, no yew harvest should be allowed. The need for a comprehensive and

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regional EIS has been established in the Notice of Intent, and if you don't follow through and issue an ROD based on an adequate FEIS and Supplemental DEIS, then any yew harvest in 1993 will be illegal. See 40 CFR § 1500.1(b) which says that NEPA documentation must be prepared before decisions are made and before actions are taken. The large-scale harvest of yew bark has gone on too long without proper NEPA documentation, and now that BMS says they have a huge stockpile of bark and they think they can use alternatives to bark, there is no justification for continued bark harvest without detailed compliance with the law.

II-14 Long-term even-flow harvest was eliminated as an alternative. Long-term even-flow harvest should be included in every alternative because it is required by the Multiple-Use Sustained-Yield Act, the National Forest Management Act, and the Federal Land Policy and Management Act.

II-35 Alt G1 Regeneration requirements may violate NFMA which requires that the natural diversity of tree species must be maintained in the forest unless there is some reason to justify not maintaining the natural diversity of species.

II-36 Relationship to the Interim Guide. This section identifies the "main differences" between alt G1 and the Interim Guide. What other differences are there?

II-42 Table II-1 says that there will be potentially significant impacts on the prey species and the habitat for the Northern spotted owl which is listed under the Endangered Species Act. Consultation with the USFWS is therefore required. I would prefer that all bark harvest be prohibited in suitable owl habitat.

II-43 Table II-1 says that none of the alternatives harvest at an even-flow rate. This implies that alt B which is limited to harvest units is not sustainable, which means that the entire Forest Service harvest program is not sustainable. I suspected that this might be true, but rarely have I heard the Forest Service admit as much. Maybe you should elaborate on the implications for future ASQs and the impact on timber communities and the ecosystem.

II-43 Table II-1 says that alt G1 will have a high positive impact on women and minorities. This statement may not be true, especially if the 5 year harvest program cuts too many trees and the alternative sources of taxol do not pan out and the drug companies want to extend the harvest at non-sustainable rates. Huge risks are not accounted for in this statement.

Also the impacts on native americans may not be high positive.

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II-46 Under alt G1 this page speaks of foliage harvest, but foliage harvest is not required nor even specifically contemplated in the description of the alternatives. Throughout the DEIS there are perplexing mentions of foliage harvest which are inconsistent with the proposed action and are purely speculative unless the preferred alternative actually mandates needle harvest.

II-54 This page indicates that maintaining minimum numbers of trees per acre per diameter class raises the cost of harvest plans, layout, and surveys. This must be why the preferred alt G1 has 0 TPA retention and increases some genetic risk factors. Why can't the big drug companies afford to maintain procedures to rigorously protect genetic resources for such a valuable species. The yew has not revealed all of its secrets yet. Let's not risk losing any more than we may already have lost. Make the profiteers pay the full cost of maintaining the resource.

II-61 Why 50 foot buffers for R-1 streams. Is it because such streams are specially able to bear the impact of yew harvest in the riparian area or because yews are common in riparian areas and there's political pressure to harvest there. NFMA says to give special consideration to harvest within 100 feet of streams.

II-62 This page speaks of regeneration to prescribed levels. What prescribed levels? We don't want another toothless standard, we want to know how many yews must be planted.

II-64 This page speaks of prioritizing harvest areas, but the priority scheme set forth in the Pacific Yew Act and the Interim Guidelines seem to be ignored. Check it out.

II-67 This section offers two radically different management standards for bark harvest near spotted owl nests. What is the scientific justification for this. The owls have similar needs whether they are found on USFS land or BLM land.

II-69 Emphasize that moose habitat suitability should be maintained at all times-- even after harvest.

III-11 Figure III-1 should be redone to make it more readable. I can't see the absolute numbers. Do it in tabular form, with real numbers.

III-12 This page says that a long-term even-flow harvest program would ensure a continuous supply of taxol, but this wasn't considered. Now that BMS has made their announcement that they don't need the bark, you should be managing for long-term even-flow harvest for other people who may demand the bark. The pressure is off. You can do the right thing now.

III-21 This page says that stumps resprout but that survival rates are unknown. I have heard that although stump resprouting does occur, there is a period during the regeneration cycle that yews are absent from the stand. One theory is that the surviving yews left after clearcuts and slash burns are first browsed to near death by ungulates which find the yew foliage very palatable, then the yews are choked of light by the tightly packed reprod stands. The yews may not reappear until they are naturally regenerated by bird droppings or maybe a few survive near streams or other discontinuities in the canopy. Look into this new information and explain in the FEIS what the implications are for regeneration and management of yew trees and the overstory.

III-28 This page indicates why the zero TPA retention plan is unwise. Genetic diversity of yew is higher than for other wind-pollinated trees and yew populations tend to be unique unto themselves. Each population is related to itself and not closely related to other populations, therefore we must save part of each unique population. Five TPA will be much better than zero TPA retention, and pharmaceutical interests can certainly afford it.

III-44 This page says that yew are found in the northern Sierra Nevadas but the map of the yew's range on page III-37 doesn't show where.

III-77 This page indicates that much remains to be known about the relationships between yew and other species. What do the CEQ regs say about dealing with uncertainty under NEPA? How important is the unknown information to making an informed decision? What are the possible consequences of making a decision with adverse but unknown consequences? How hard would it be to collect the necessary information?

III-79 This page mentions spotted owls much too briefly. you should elaborate here. Describe the affected environment shared by yew trees and owls.

III-106 Update the demand information on this page with the fact that FDA has approved taxol for commercial use and the announcement by BMS that they don't require any yew bark from federal lands.

III-111 These are the real alternatives that the FDA and the USFS should be exploring. The DEIS acknowledges the relevance of alternatives, but the DEIS does not perform the required NEPA analysis of them. The EIS must describe and compare the environmental consequences of these alternatives.

III-130 This page says under most conditions bark harvest won't be allowed in a wild river corridor. All wild river corridors should be protected from harvest of all kinds.

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IV-4 This page says that the effects of the alternatives are based on current conditions and reasonable foreseeable future actions. Since BMS made their announcement, and FDA approved taxol, current conditions and foreseeable future actions have drastically changed. These changes indicate that a supplemental DEIS must be prepared to address the new information bearing on the proposed action. See 40 CFR § 1502.9(c)(ii). This CEQ regulation creates a non-discretionary duty on the part of the USFS and the cooperating agencies to prepare a Supplemental Draft EIS and make it available to the public for review and comment before the FEIS is prepared. The Supplemental DEIS should include new alternatives and new descriptions of the environmental consequences of the alternatives.

IV-4 This page says that needle harvest was not seriously considered in the DEIS because bark is the only raw material currently approved by the FDA for use on humans. See 40 CFR § 1502.14(c). This CEQ regulation creates a non-discretionary duty to consider reasonable alternatives not within the jurisdiction of the lead agency. Needles must be considered as an alternative because it is a reasonable alternative. BMS and others are actively considering the needle alternative, but they are doing so outside the NEPA process. This is illegal. NEPA requires consideration of reasonable alternatives in the NEPA process so that the environmental consequences of the alternatives can be readily compared by the decision-maker and the public and so environmentally sensitive decisions can be fostered. The fact that FDA is a cooperating agency further supports the argument that the needle-only alternative must be considered, because it is the FDA who could approve taxol from needles for use on humans. The FDA is required to help applicants such as BMS to make environmentally sensitive decisions. If BMS comes to the FDA with an application for taxol from bark, they should explore with BMS the alternative sources of taxol, such as from needles, and they should describe the environmental impacts of the alternative sources of taxol for the benefit of the decision-maker and the public.

IV-5 You have assumed on this page the yew will be regenerated and protected as a recognized tree species under the LRMPs. There is no basis for this assumption. Yew trees have never been actively replanted, nor has yew regeneration been consciously planned in any LRMP. Yew regeneration is a very inexact science, so this assumption must be changed, and the discussion of environmental consequences adjusted accordingly.

IV-6 This page discusses past harvest of yew, but fails to account for bark that has been poached and stolen from federal lands.

IV-6 The short-term demand assumption on this page must be questioned. At least one alternative must assume that the harvest of natural yew products will continue on a long-

term basis, so that a long-term even-flow sustained yield must be maintained. Semi-synthesis and all the other potential future sources of taxol are still speculative, so you should not base your entire EIS on the questionable assumption that harvest in the wild will end. The various alternatives considered should be based on reasonable alternative assumptions so that the entire range of reasonable alternatives are considered.

IV-12 says that the inventory counted all trees over one inch in diameter, but the harvest alternatives focus on trees over 3 inches in diameter. Are you sure there is not some over-counting of available bark in the translation from the tree inventory to the bark inventory?

IV-17 discloses that inventory sampling error and modelling error can be quite large. Please disclose your methods and your inventory data, so interested people can run our own estimates of error.

IV-18 seems to say that if we harvest all the yew trees which this EIS potentially allows, then we will not be able to harvest any more yew for 100-200 years (see IV-129). This uneven flow harvest is not a sustained yield harvest regime as it is commonly understood by Congress or the public. You are authorizing the harvest of 50% of the available yew trees over a 5 year period. The unavailable yew trees are needed to maintain a viable population of yew and to protect wilderness, and riparian areas. Harvesting 50% of this slow-growing species, without knowing whether we can effectively regenerate the yew, and without knowing whether alternative sources of taxol will actually be available when needed is very very risky. I totally oppose this high risk alternative as a totally unnecessary risk. The needle alternative is viable; at least viable enough to be considered as an alternative to this risky venture.

The Multiple-Use Sustained-Yield Act (MUSY Act) requires the USFS to maintain in perpetuity a high level annual or regular periodic output of renewable resources such as yew trees. The proposed output level in alternative G1 clearly could not be maintained in perpetuity, but is this a regular periodic output? Well if it is, the "period" is over 100 years. I don't think that Congress had in mind a 100 year period when it passed the MUSY Act. I think that alt G1 is a patently illegal interpretation of the MUSY Act.

IV-21 says that alt B proposes to harvest a quantity of bark closest to the sustained yield quantity of harvest. This information must be included on Table II-1 on page II-43 so that the decision-maker can see that one of the alternatives might comply with the MUSY Act.

IV-23 The effects of the uneven-flow harvest plan must be much more fully described. Implementation of Alt G1 could preclude further harvest of yew after the five year

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period covered by the EIS. What if the alternative sources of taxol don't come on line like everyone wants to believe? What risks to human health are at stake? You must tell us the significance of these indirect effects of alt G1. People may die because they are denied access to taxol because we drastically overcut the yew for five years. See 40 CFR § 1502.16(b), which says that you must describe the significance of the indirect effects. See also 40 CFR § 1508.8 which describes indirect effects as those that occur further removed in time and distance than direct effects.

IV-30 speaks about foliage removal from 75% or 50% of the yew trees in partial cut and non-sale areas. Where does this come from? This is confusing, and inconsistent with the general scheme of this DEIS. These detailed descriptions belong in the description of the alternatives, then in the discussion of environmental consequences you must discuss the impact of such needle harvest. It looks to me like the DEIS might have addressed needles in more detail in an earlier draft, but someone made you take it out, and this sentence and other similar references to needles accidentally didn't get deleted.

IV-55 says that a continuation of past harvest practices could affect the connectivity of yew populations. This indicates that an alternative should be considered in which current harvest practices are altered to improve yew tree conditions. The existing short-rotation even-age method is not good for yew trees, so in areas where yew is more common, alternative management practices should be considered. An alternative such as this fits into the ecosystem management scheme that is currently being developed by the USFS. This EIS team could be on the cutting edge by developing a yew-friendly forest management alternative. See also page IV-110.

IV-94 This page indicates that road building may be used just to access remote yew populations. This is a bad idea. More jobs would be created if the workers had to walk in a little and carry the sacks of bark out. Road building has so many adverse environmental impacts, from water quality to big game habitat degradation, that you should just leave it out of the EIS or explain these adverse effects more fully.

IV-102 This page lists the T&E species assumptions. First, you assume that no federal laws will be broken, next you assume that if no laws are broken then no adverse impacts will occur. **THIS IS RIDICULOUS.** The federal environmental laws set forth the very minimum requirements that must be met, they do not create an absolute level of protection which prevents all adverse effects. A presumption that no adverse effects will occur is patently unjustified. For instance, when a species is proposed to be listed under the Endangered Species Act (ESA), the Act requires that federal agencies confer with the USFWS if their proposed action is likely to jeopardize the continued existence of the species. An agency could legally undertake an action which had severe adverse effects on a species proposed for listing, even without conferring, because the action does not

rise to the level of being "likely to jeopardize" the species. Adverse impacts and jeopardy are two different things. Also, even if the agency did confer, they are not bound by federal law to follow the recommendations of the USFWS, so they could go ahead and cause serious adverse impacts and even jeopardy without violating any federal environmental laws. Change these assumptions and adjust your discussion of environmental consequences accordingly.

IV-106 says that yew harvest could reduce carrying capacity of ungulate winter ranges. This is a serious impact and should be avoided. Choose another alternative to avoid this result.

IV-118 This page describes the demand for bark based on the current bark processing capacity. This is totally inappropriate. Processing capacity is not representative of demand. What is the real demand? Not how much BMS wants, how much the public needs. How is this action designed to meet an identified demand?

IV-128 Irreversible effects should be described by alternative. This discussion of uneven-flow harvest in the irreversible effects section, seems to support my contention that the MUSY Act is being ignored.

IV-129 says that lost ASQ in reserve areas is an irretrievable loss. ASQs of the various LRMPs must be adjusted accordingly. Coordinate this EIS with other planning efforts to make sure ASQs are reduced accordingly.

IV-129 This page says that the irretrievable loss of a treatment option due to lack of access to taxol applies only to alternatives A and B. This is wrong because of Irreversible Effect number one on the previous page. The irreversible effect of the uneven-flow harvest plan which is that we cannot go back into the forest for 100-200 years. During this 100-200 years there may be a loss of a treatment option, because we do not know if and when alternative sources of taxol will come on line.

Appendix page A-2 indicates that 211 public comments urged you to establish a sustainable level of collection. This was the most common comment among all the comments. Obviously this is a very important issue. I think the public wants to see a truly sustainable long-term even-flow harvest level, not a risky uneven-flow harvest regime. The MUSY Act was one of the earliest environmental laws, passed in 1965 I think. This means that Congress also wants to see a truly sustainable harvest of renewable resources.

Appendix C-6 indicates that genetic reserves on BLM land will be based on tree seed zones. How big are these zones? Are they comparable to USFS planning areas used in

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the FS reserve areas or are they bigger?

App F-2 says that an inventory design was chosen which would minimize the number of plots that would need to be sampled. The yew is very unevenly distributed; its distribution is sparse and clumpy. This type of distribution indicates that more nor fewer plots should be sampled.

App F-3 says that regression analysis didn't work to identify areas where yew might occur, so the plan to reduce the number of acres needing to be inventoried was based on two guys' "experience." This is not very scientific. NEPA demands scientific accuracy. See 40 CFR § 1500.1(b).

App F-6 says that 1875 plots were sampled, but these plots were chosen from a pool of 30 plots per stratum per forest. I think this pool of potential plots may be comprised of 2340 plots. How were the 1875 plots chosen from among the larger pool of potential plots? Was it the easier plots to access? The plots closest to roads? Was there an elevation bias, a proximity to water bias, or any other bias? If it wasn't a random selection, there may be a problem.

App F-7 says that the USFS classified the inventory data to reflect whether harvest was allowed or not. Did these classifications exclude all the lands that should be excluded, such as: HCAs, wilderness areas, wild river corridors, riparian areas, genetic reserves, RNAs, steep slope areas, unsuitable soil areas, and other unique and sensitive areas (moose habitat, special Siskyou Mtn habitats, unique plant associations, unique geologic settings, extremes of the yew's range)?

App F-13 talks about the inventory polygons. How big were the polygons? What are the implications of the size of the polygons?

App F-15 says that the BLM used local knowledge to concentrate their yew inventory. Basically this subjective concentration of the inventory means that it was not a random sample, so the BLM inventory is probably not very good.

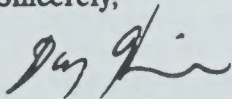
App K-10–K-19 This document describes BMS's search for alternative sources of taxol. This document shows conclusively that the applicant (BMS) who is driving this entire EIS process is actively considering reasonable alternatives which are not considered in this DEIS. The failure to consider these alternative sources of taxol, such as needle harvest, is a clear violation of NEPA. See 40 CFR § 1502.14. The Forest Service and the FDA must consider the alternatives described in this Appendix K newsletter. They must describe the alternatives and compare the environmental consequences of these alternatives. To do otherwise would be to avoid the plain intent of NEPA, which is that

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decision-makers consider the environmental impacts of their decisions and consider reasonable alternatives to accomplish the purpose of the action in an environmentally sensitive manner.

I hereby incorporate by reference my scoping letter dated January 29, 1991, my supplemental EIS letter dated February 2, 1993 and my Citizens Petition to the FDA dated January 11, 1993. Thanks for the opportunity to comment.

Sincerely,



Doug Heiken

c:
Wendell Wood, ONRC
David Pilz, NYCC
Phil Vincent, FDA



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Forest
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Dear Mr. Heiken,

Thank you for your responses to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. After reviewing all the comments, we made several changes in the final Environmental Impact Statement. I will try to respond to some of your comments here, beginning with your letter of February 2, 1993.

You state that the EIS will not be adequate until the environmental consequences of all the reasonable alternative sources of taxol, including yew needles, are explored in an EIS. We find the range of alternatives still reasonable within the scope of the purpose and need of the EIS. We considered a "Needles Only" alternative, but did not develop it fully. Please see page II-13 of the FEIS, "Alternatives Considered but Eliminated from Further Study."

In response to your suggestions that we rethink the underlying purpose and need for the proposed action: We find the purpose and need for the proposed action still valid; only the magnitude of the proposed action has changed. We clarified the proposed action and purpose and need statement to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We find the purpose and need statement still applicable because we foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes. Pharmaceutical companies other than Bristol-Myers Squibb Company may file an Investigational New Drug Application or a New Drug Application with the Food and Drug Administration (FDA) and wish to purchase yew material from federal lands. And companies developing taxol or taxane processing techniques may require various amounts of yew material, especially if they meet FDA manufacturing requirements.



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We find the range of alternatives adequate; it covers a wide spectrum of amounts of Pacific yew material that might be needed for taxol. See page II-13 of the FEIS for a description of an alternative that would allow for a harvest of needles only. In response to suggestions, including yours, we considered this additional alternative, but did not carry out a full analysis of its impacts. All alternatives, except Alternative A, permit the harvest of any or all parts of the Pacific yew for taxol. Even though the New Drug Application awarded to Bristol-Myers Squibb Company for taxol may be amended to include taxol from needles, we have no indication that needles from wild Pacific yew trees will be needed or requested.

You state the DEIS should have considered an alternative that focused on managing yew habitat for yew products, prohibits clearcutting from prime yew habitat, and considers an alternative to short rotation, even-age management: Analysis of different timber harvest regimes is outside the scope of this EIS. Mitigation measures for timber sale units in Alternatives B through G2 require that yew be maintained or replaced on the site at pre-harvest levels, or where extremely abundant, at prescribed levels (see Mitigation Measures, page II-55 of the FEIS). In non-sale areas and partial-cut units, in Alternatives C through G2, yew populations should be maintained by unharvested yew, stump sprouting, and regeneration arising from seeds from mature yew left on the site (see page IV-22 of the FEIS). Analyses of different harvest regimes will be carried out by forests as they implement and adjust forest and resource management plans and as ecosystem management principles indicate the need to consider different management approaches.

You suggest that the real need for the proposed action is the need for taxol. The need for our proposed action is the need for Pacific yew material for taxol production. As a resource management agency, our concern is for the resource, in this case, the Pacific yew. Responding to the broader need for taxol is outside the scope of our proposal. Exploring methods of obtaining taxol, other than harvesting yew on federal lands, is outside the scope also.

The remainder of this letter responds to your comments dated March 13, 1993, specifically those comments that are additional to your February 2 letter.

In response to your suggestion that a supplemental draft Environmental Impact Statement is required: We did not prepare a supplemental draft because we find the original proposed action and purpose and need still applicable, for the reasons given in response to your February letter.

In response to your comment that "The large scale harvest of yew bark has gone on too long without proper NEPA documentation, and now that BMS says they have a huge stockpile of bark and they think they can use alternatives to bark, there is no justification for continued bark harvest without detailed compliance with the law.": In previous decades, Pacific yew trees were judged to have little or no economic value and were routinely destroyed during harvest operations for commercial species. NEPA documentation was not required other than for normal timber sale operations. Passage of the recent Pacific Yew Act of 1992 requires additional considerations where yew is present on federal lands. Although Bristol-Myers Squibb has said it does not want additional yew bark from federal lands, there may be other researchers and institutions that may request it.

You state that long-term even-flow harvest should be included in every alternative because it is required by the Multiple-Use Sustained-Yield Act, the National Forest Management Act, and the Federal Land Policy and Management Act: These acts refer to the concept of sustained yield, which all of the alternatives meet. See the revised sustained yield section in Chapters III and IV of the FEIS for clarification of sustained yield.

You state that the Alternative G1 regeneration requirements may violate NFMA which requires that the natural diversity of tree species must be maintained unless there is a good reason not to: Mitigation measures for timber sale units in Alternatives B through G2 require that yew be maintained or replaced on the site at pre-harvest levels, or where extremely abundant, at prescribed levels. (See Mitigation Measures, page II-55 of the FEIS.) In non-sale areas and partial-cut units, in Alternatives C through G2, yew populations should be maintained by unharvested yew, stump sprouting, and regeneration arising from seeds from mature yew left on the site (see page IV-22 of the FEIS).

You ask what are the differences between Alternative G1 and the "Interim Guide" not listed in the EIS: The only difference, currently, between Alternative G1 and "An Interim Guide to the Conservation and Management of Pacific Yew," as revised April 1993, is the minimum number of yew that must be left in each size class in each acre (1 tree per acre per diameter class in Alternative G1; 5 trees per acre per diameter class in the "Interim Guide"). The Pacific Yew Technical Committee met in March of 1993 to review and update the "Interim Guide" for the 1993 harvest season; the revised "Interim Guide" is available upon request.

In response to your comments about impacts of yew harvest on wildlife, threatened and endangered species, and the northern spotted owl in particular: We have consulted with the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as required. Potentially significant impacts to spotted owls would occur with only some of the alternatives. Formal consultation with the USFWS and NMFS is only required if the selected alternative is likely to adversely affect listed species.

In response to your comment about even-flow harvest rate shown in Table II-1 (DEIS page II-43): See the revised sustained yield section in the FEIS Chapters III and IV for clarification of "sustained" yield.

Sustained yield and even-flow are two distinct terms. Sustained yield means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of various renewable resources of the national forests without impairment of the productivity of the land. Commodity extraction could occur at one, several, or many intervals during the rotation period without violating the sustained yield concept, providing the total commodity level for the rotation is not exceeded. Even-flow harvest refers to equal amounts of the commodity extracted at regular intervals throughout the rotation period (for example, 10,000 pounds a year). As you noted, all the alternatives, except Alternative A, represent uneven-flow harvests of Pacific yew.

You state that Table II-1 says that Alternative G1 would have a high positive impact on women and minorities, including native Americans; you feel this may not be true and high risks are not accounted for in this statement: We based this conclusion on the assumption that alternative sources of taxol would be developed within five years (see Assumptions, page IV-4 of the FEIS).

You note that on page II-46 of the DEIS under Alternative G1 that foliage harvest is mentioned in a perplexing manner: All alternatives except Alternative A allow for the collection of foliage. In the FEIS we added information about foliage collection under Alternatives B through G2 (see pages II-21 to II-38 of the FEIS).

In response to your question about stream buffer widths in the Northern Region (Idaho), DEIS page II-61: We changed the text to make buffer widths consistent in both the Pacific Northwest Region and the Northern Region -- 75 feet. The 75-foot buffer is the minimum width; in many cases, forest or resource management plans call for much wider buffers.

You question what are prescribed levels for yew regeneration (page II-61 of the DEIS)? Levels of yew regeneration, other than pre-harvest levels, may be prescribed if yew is extremely abundant at the site (more than 50 plants an acre). Prescribed levels may also be greater than the current population in order to replace yew lost in previous harvesting activity, fire, or for other reasons.

You suggest we ignored the Pacific Yew Act and the Interim Guidelines when prioritizing harvest areas: We do not see a conflict between our very general discussion of prioritization of stands and either the Pacific Yew Act or "An Interim Guide to the Conservation and Management of Pacific Yew." All laws, including the Pacific Yew Act, will be followed.

Both the Forest Service and the Bureau of Land Management now have the same management standards for bark harvest in owl conservation areas: Yew harvest is not allowed within a 500-acre radius of known spotted owl nest sites (see page II-63 of the FEIS).

Moose habitat suitability, stated in the DEIS, page II-69, is further discussed in terms of protection and requirements in the FEIS Chapter IV. In the wildlife section we discuss likely effects of the alternatives on moose and their habitat.

We have redesigned and clarified Figure III-1 and added additional tables that show diameter distribution information.

You suggest that we update the demand information (page III-106 of the DEIS) to reflect FDA approval of taxol for commercial use and the announcement by BMS that they no longer require yew bark from federal lands: We have updated the information (see pages III-98 to III-100 of the FEIS).

You state that yew trees should be managed for long-term even-flow harvest for any who may demand the bark, in response to page III-12 of the DEIS: See the revised sustained yield section in the FEIS Chapters III and IV for a clarification of sustained yield.

You suggest we look at new information about yew regeneration (page III-21 of the DEIS) and explain in the FEIS what the implications are for regeneration and management of yew trees and the overstory: We believe there are many scenarios where yew develops in a stand, depending on the presence or absence of different factors such as high or low ungulate populations and presence or absence of vegetative sources or seeds. We have access to the latest research about yew regeneration and are unfamiliar with any published research that discusses the scenario that you mentioned.

You suggest that the 0 TPA retention plan is unwise: We have revised how we express the minimum trees per acre (TPA) for Alternatives G1 and G2. Zero TPS has been replaced with one TPA, where for any diameter class on any acre, at least one yew will be kept.

We corrected an error on the map, FEIS page III-37, that confused the Sierra Nevadas with the Modoc Plateau.

In response to your questions about the relationship between yew and other species, (page III-77 of the DEIS): Although there is information lacking, none of it is considered essential to a reasoned choice among the alternatives. (See 40 CFR 1052.22.)

Much has been written about spotted owls in other documents. Citations of some of these documents have been added to Chapter III (page III-76) of the FEIS. Appendix J, as written in the DEIS, also contains additional information on spotted owl habitat not included in Chapter III or IV of the DEIS.

We updated Table III-14 to reflect the changed demand for taxol.

You suggest that the EIS should describe and compare the environmental consequences of the alternative sources of taxol listed on page III-111: An analysis of alternate sources of taxol, beyond material from the Pacific yew, is outside the scope of this EIS.

You state that all wild river corridors should be protected from harvest of all kinds (page III-130 of the DEIS). Management of natural resources in wild river corridors is regulated by direction established in the original Congressional legislation and comprehensive management plans, as stated in the FEIS page III-119.

You state that because of changed circumstances that were not accounted for on page IV-4 of the DEIS, we should prepare a supplemental DEIS. As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public comment, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You state (in response to a statement on page IV-4 of the DEIS) that needles must be considered as an alternative. In the FEIS we added a needles only alternative for consideration, but did not carry out a complete analysis of the potential effects of implementing it. See page II-13 of the FEIS for a description of the needles only alternative and the reasons it was dropped from further consideration.

You question an assumption stated on page IV-5 of the DEIS that yew will be regenerated and protected as a recognized tree species under the LRMPs: We believe the Forest Service and the BLM have extensive experience in successfully regenerating and planting both coniferous and hardwood species. Federal and private nurseries are successfully propagating Pacific yew and several forests have planted yew in the field.

You point out that the discussion of past harvest of yew (page IV-6 of the DEIS) fails to account for bark that has been poached and stolen from federal lands: The yew inventories, completed in August, 1992, accounted for yew removed from federal lands, either through harvest or theft, prior to 1992. Although at least 300,000 pounds of bark were stolen from national forest lands in 1991 (and an unspecified amount from BLM lands in 1991 and before), implementation of tight accountability standards in 1992 reduced theft to negligible levels.

You say that the short-term demand assumption on page IV-6 of the DEIS must be questioned and at least one alternative must assume that the harvest of natural yew products will continue on a long-term, even-flow, sustained yield basis: We examined a long-term, even-flow harvest alternative, but did not fully develop it. See the FEIS page II-13 for a description of this alternative and the reasons it was not carried forward.

The DEIS page IV-12 states that the inventory counted trees one inch in diameter and above, but harvest alternatives focus on trees over three inches in diameter. You want to know if there could be overcounting of available bark: In the modeling process for the inventory only those trees over three inches diameter breast height were used to model the output of bark.

You ask for disclosure of inventory data: The inventory data is available through the Pacific Northwest Research Station (USFS) and the model information is available by contacting the EIS team.

You note that if we harvest all the yew trees that the EIS potentially allows (pages IV-18 and IV-129 of the DEIS) we won't be able to harvest yew again for 100 to 200 years. You state that this uneven-flow harvest is not a sustained yield harvest regime as it is commonly understood by Congress or the public. Further you state that you don't think that Congress had in mind a 100-year period when it passed the Multiple-Use Sustained-Yield Act: See the revised sustained yield section in the FEIS Chapters III and IV for clarification of sustained yield.

You ask that the effects of the uneven-flow harvest plan and the direct and indirect effects of Alternative G1 (page IV-23 of the DEIS) must be more fully described: The direct, indirect, and cumulative effects of implementing Alternative G1 are described under each resource in Chapter IV. The information in the "Yew Population and Inventory" section simply describes the amount of yew that could be removed under each alternative.

You state that the discussion of foliage removal for Alternatives F, G1, and G2 (page IV-30 of the DEIS) is confusing and inconsistent with the general scheme of the DEIS, that these descriptions belong in the description of alternatives: We did not change the discussion of the impacts of needle removal or regeneration potential; we think it is an important and necessary part of Chapter IV.

You state that the discussion of effects of past timber harvests on yew population connectivity (page IV-55 of the DEIS) indicated that we should consider an alternative where current harvest practices are altered to improve yew tree conditions -- a yew friendly forest management alternative: Mitigation measures for timber sale units in Alternatives B through G2 require that yew be maintained or replaced on the site at pre-harvest levels, or where extremely abundant, at prescribed levels. (See Mitigation Measures, page II-55 of the FEIS.)

In non-sale areas and partial-cut units, in Alternatives C through G2, yew populations should be maintained by unharvested yew, stump sprouting, and regeneration arising from seeds from mature yew left in the site (see page IV-22 of the FEIS). Analyses of harvest practices will be carried out by each forest as they implement and adjust forest and resource management plans and as ecosystem management principles indicate the need to consider different management approaches.

In response to your comment about the adverse effects of road building (page IV-94 of the DEIS): If an alternative is selected that permits road building for yew harvest, adverse effects of specific road building projects (if any roads were to be built) would be analyzed in more detail in project-level analyses.

In response to your disagreement with the assumptions about threatened and endangered species, (page IV-102 of the DEIS): The intent of this proposal is to harvest yew while not causing adverse impacts to threatened and endangered species. There are federal laws and policies covering this and the intent is to meet or exceed the protection in those documents. We conferred with the US Fish and Wildlife Service and the National Marine Fisheries Service to see if the action resulting from our decision would cause adverse effects. They have concurred with our assessment that our decision "may affect, but is not likely to adversely affect" listed species (see Appendix J).

Further analysis of effects on winter range and completion of the Biological Assessment have caused us to change the statement about carrying capacity of ungulate winter ranges, (page IV-106 of the DEIS). The level of yew harvest is not expected to lower the carrying capacity of winter range due to past management decisions to protect winter range.

You ask about demand (page IV-118 of the DEIS) -- what is the real demand and how is this action designed to meet an identified demand? Demand is currently uncertain. The proposed action is designed to meet some level of demand if it should arise over the next five years.

You ask that irreversible effects be described by alternative; you say that the discussion of uneven-flow in the irretrievable effects section (IV-128) supports your contention that the MUSY Act is being ignored: Because all alternatives, except Alternative A, address a short-term harvest program, irreversible effects are similar for these alternatives and we find it appropriate to address irreversible effects in one section. (See page IV-121 of the FEIS.)

In response to your comment about ASQs (allowable sale quantities), DEIS page IV-129: Because the land base for calculating allowable sale quantities is reduced, there will be irretrievable loss of allowable sale quantity volume. The BLM is coordinating its Resource Management Plans with the Pacific Yew EIS. Both documents are interrelated and can be supplemented if needed. Forest plan adjustments may be needed if suitable land bases change substantially.

You say the conclusion that the irretrievable loss of a treatment option due to lack of access to taxol applies only to alternative A and B is wrong because of Irreversible Effect number one on the previous page (page IV-128 of the DEIS): We do not see a conflict between these two conclusions.

You reference Appendix A and the public comments urging a sustainable level of collection and you think that Congress also wants to see a truly sustainable harvest of renewable resources: See the revised sustained yield section in the FEIS Chapters III and IV for clarification of sustained yield.

To answer your questions about genetic reserves on BLM land (Appendix C-6 of the DEIS): BLM manages non-contiguous blocks of land and has different administrative boundaries than the Forest Service. The seed tree zones used by BLM for establishing Pacific yew genetic reserves are considerably larger than Forest Service local management areas, encompassing up to several hundred thousand contiguous acres. This is one of two reasons the elevation band for genetic reserves is 1,000 feet for BLM genetic reserves rather than 2,000 feet used by the Forest Service. The other reason BLM uses 1,000 foot intervals is to compensate for intermingled private lands which are likely to have fewer sexually mature yew trees.

You state that based on the inventory design described in Appendix F page 2, that more plots should be sampled: As the inventory proceeded it became apparent that we were finding yew in areas where we did not expect it to be. Consequently, we sampled all stratum at the same level. We did not eliminate areas from the sample except for elevation reasons or because an entire forest had insignificant populations, in which case the entire forest was not sampled (i.e., the Siuslaw and Olympic National Forests).

You state that decisions about the inventory modeling (Appendix F-3) based on "two guys experience" is not very scientific and NEPA demands scientific accuracy, (40 CFR 1500.1 b). Estimates of the elevation range by the two Forest Service ecologists was the most accurate information available.

Also referring to Appendix F you ask how the inventory plots were chosen from a pool of 30 plots per stratum per forest?: Forest inventory personnel were instructed to locate between twenty to thirty plots per stratum depending on the length of the field season. This would have resulted in 1820 to 2730 total plots in the region. These plots were selected randomly.

And, you ask, did the classifications exclude all the lands that should be excluded such as HCAs wilderness areas, etc. (Appendix F-7)? Yes, classifications that were mapped during the forest planning process were removed directly. Those classifications such as unsuitable soils, cultural artifact sites, and sensitive plant locations may not be mapped at this time. They are usually located during site-specific analysis. The available bark was reduced by 25 to 50 percent to reflect the potential reduction that could result from finding these unmapped areas during the site-specific planning.

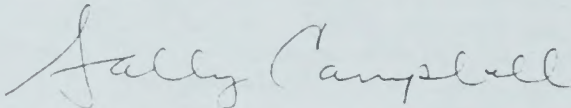
Another question you have is, how big were the polygons (Appendix F-13)? The polygons ranged from 40 to 700 acres in size. Since sampling density remained constant and did not vary due to the size of the polygon, the actual size was not important.

In response to comments about inventory of yew on BLM lands, (DEIS Appendix F): BLM used the knowledge of local field foresters to stratify total BLM ownership into several strata of similar yew occurrence. Within each strata, plots were installed randomly. Stratification is a widely recognized method of achieving sampling efficiency. If the BLM had randomly installed its 820 plots without stratification, the resulting information would be considerably less reliable.

You state that the DEIS must consider the alternatives discussed in the Bristol-Myers Squibb Company background material included in Appendix K (K-10 to K-19): We find the range of alternatives still reasonable within the scope of the purpose and need of the EIS. We considered a "Needles Only" alternative, but did not develop it fully. See page II-13 of the FEIS, "Alternatives Considered but Eliminated from Further Study."

We hope these responses will satisfy your concerns as you expressed them in your scoping letter, citizen's petition to the FDA, and the two letters in response to the draft Environmental Impact Statement. Again, we thank you very much for your interest in this project and concern for the well being of the environment, including people and the yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#60 31593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by March 15, 1993. Thank you.

Do you agree with the preferred alternative? _____

Why or why not? _____

I think that the yew needles are an overlooked and underutilized resource. Yew needles should be processed in terms of taxol and related taxoid contents, time of harvest, control variegation, pre-processing, etc. Investigations should also be made into yew byproducts from needles such as yew waxes and oils.

I prefer Alternative _____ because: _____

What other comments do you have? _____

(Please Print)

Name: Dr. Trevor P. Castor ID# (from label) 4478

Organization: Bio-Eng, Inc.

Address: 3-E Gill Street

City: WOBURN, MA 01801

State/Province: MASSACHUSETTS Zip Code: 01801

Country: USA

Pacific Yew EIS
Summary



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Dr. Trevor P. Castor
Bio-Eng, Inc.
3-E Gill Street
Woburn, MA 01801

Dear Dr. Castor,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning yew needles. Please see page II-13 of the final EIS for a discussion of a needles only harvest that is briefly described but not analyzed in detail in the final EIS.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

Sally J. Campbell
Leader, Pacific Yew EIS Team



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#61 31593

Pacific Yew Draft Environmental Impact Statement

What do you think?

13 Mar 93

Please let us know by March 15, 1993. Thank you.

Do you agree with the preferred alternative? No

Why or why not? Prefer Alternative C rather than D
because it seems more appropriate to error on the ~~safe~~ conservative
side in harvest of yew in non-timber harvested land. This is such
a long-lived species we should be certain we keep a viable
populations across the landscape that will allow for species
variation that may require a longer time frame - much like
studying 100 year events 25 years at a time. Revision
of alternatives should be possible as our knowledge base grows

I prefer Alternative C because: as indicated above

What other comments do you have? My sincere thanks for all of
the effort that went into the preparation of this massive document
that provides us with a detailed review of what is known about
this obscure plant. It provides perhaps the very best example
of what was an unknown species that suddenly vaulted into
national and international prominence. We know now are many
more such species. I hope we will be so fortunate to have so
much available for consideration. Bravo for a job well done.

(Please Print)

Name: John D. Lattin ID# (from label) _____

Organization: Department of Entomology

Address: Oregon State University

City: Corvallis

State/Province: OR Zip Code: 97331-2907

Country: U.S.A.

Pacific Yew EIS
Summary



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

John P. Lattin
Department of Entomology
Oregon State University
Corvallis, OR 97331-2907

Dear Mr. Lattin,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses to the draft EIS; we studied all the comments and made changes in the final Environmental Impact Statement. And thanks for your compliments!

We carefully considered your comments in favor of Alternative C and your concerns for viability of the species across the landscape. As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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2/13/93

Gentlepeople:

I am currently at the International Yew Resources Conference and am acutely aware of how rapidly all of the circumstances related to the Pacific yew and its taxon can change. I shall feel that it is very important to respond to the Draft EIS and will do so as best I can. I base my comments on my observations in the Klamath Region of Northern California from extensive searches for research sites, and from observations made and data collected on the Ukiah district of the Klamath National Forest and the South Fork Mountain area of Shasta-Trinity National Forest.

I do not see an alternative that matches my preference given Bristol Nyer's announcement that it no longer needs material from the National Forests. I feel that it is still important to address yew conservation because ongoing forest management practices have had a significant impact on yew populations aside from this special harvest. The current practice of fairly short rotations and the common usage of broadcast burning following harvests ~~are~~ do not accommodate the fire sensitivity of yew and its slow growth. I am encouraged by the presentation here by Frank Betlejewski of BLM Medford that low intensity burns with ignition with held near areas of yews may be sufficient to significantly increase yew survival. His observations are only preliminary and are not sufficient in themselves, but suggest a promising direction and should be shared with the Forest Service.

In looking for sites I found that in areas of intensive harvest I was unable to find stands of sufficient size to serve in my study. I find that the stream protection zones are not at all an adequate protection for yews. In the northern area of Klamath National Forest I only found the yews right in the bottom of draws in areas that did not have perennial flow and, from what I understand, would not qualify as stream protection zones. In one instance the best group of yews I found - some of the largest in diameter and most dense were along such draws. In contrast along second order streams the yews were more dense over 75' from the streams, sometimes in a band as much as 150' from the stream. There are a number of reasons for this. This area has experienced a number of flood events including 1955, 1964, and 1970. In some areas most adult trees of all species were eliminated or had stems removed near creeks. Some of the stems are regrowing from roots and a large number of seedlings, primarily of conifers other than ~~Douglas~~ yew are coming in. In other cases I observed scouring and slides that removed all vegetation up to 100' from the creek with a heavy regrowth of alders and very few yews despite abundant seed sources just up slope. If logging routinely extends down to 75' from the stream then the bulk of yew populations are subject to the cumulative impacts of these processes.

One of the best conservation practices for yews are the habitat conservation areas. Both of the areas I selected for my research because of their relatively large stands of yews turned out later to be in habitat conservation areas. Many "hooters" helped me to find areas of yew abundance. I found that their work took them into such areas even more than those who were specifically surveying riparian areas. "Hooters" who had several years of experience and seemed to have developed a sense of what good owl habitat looked like indicated that owls preferred habitat with yew trees.

At this conference it has been suggested the yew is an effective indicator species and that guidelines which seek to preserve it will probably serve to protect an entire segment of forest inhabitants. I take the overlap between HCTs and yews to be additional support for HCTs.

On a related point, I found that the only mention of the use of yews by rodents related to the use of arils. In my studies I observed that some sort of unidentified small rodents frequently harvested small branchlets from trees and browsed small seedlings. I am not certain how the branchlets were utilized, possibly for food or nest material, but it was a fairly common observation. I also observed yew branch utilization by mountain beaver, although it did not preferentially favor yew, unlike all other browsers. I also observed a medium size branch protruding from a burrow that was approximately 15 cm in diameter.

It is possible that most of these smaller yew browsers could serve as food for the spotted owl.

Another concern I have relates to herbivory by larger browsers such as deer and elk. Deer browsing has had a significant impact on yew regeneration at one of my sites with over 50% of saplings 16-90 cm tall having their leaders browsed at least once and an even larger percentage browsed on their branches. Catherine Parks has even more compelling observations of damage by elk. In these cases it appears that fragmentation of forest areas may place increasing browse pressure on the unmanaged islands and should be an additional concern in management practices.

A final general comment refers to the Interim Guide to the Conservation and Management of Pacific yew. I have found that silviculturists in California, particularly in areas of lower yew abundance have not found easy ways to implement it and have not found that it addresses the situation in California well. I think it is an important management effort, but may need clarification or modification for the California populations.

In summary, I feel there is a strong need for considering the cumulative impact of ongoing forest management practices on the Pacific yew even if the harvest of bark is stopped on the forests. The current practices have strongly reduced the total numbers of yew with no real utility gained from this highly unique and versatile tree. I found that I could tell unburned clearcuts on sight ^{or increased yew regeneration in them} and feel that eliminating burning near yews or only using a very low intensity burn is important to the

ongoing health and survival of yew populations. Additionally, stream protection zones will not adequately protect the yew and forest fragmentation has in places led to a very high browsing pressure.

I feel that it is very important to use this opportunity to look at these ongoing practices and to modify them or to continue genetic reserves as a way of ensuring the survival of the Pacific yew and preserving the genetic variability of this valuable species.

I wish you the best in this process.

Sincerely

Margaret Willits

PO Box 478

Arcata CA 95521

PS I apologize for this handwritten letter. I only had time to write it after I finished my presentation at the conference and did not have access to a typewriter or a computer.

My preferred option 50% harvest in clearcuts combined with yew protection and perhaps some genetic reserves.

Addendum

Evan Frost, in an MS thesis soon to be completed at Humboldt State University, found yew was reduced in numbers at plots 30 m in from clear cut edges and only reached the levels found in unmanaged forests at the next plots which were 60 m from the edge. It is unclear whether this reduction was due to the effects of light, dessication, wind etc or perhaps to the effects of the broadcast burning (all of the units were burned) but it raises the question again of whether yews are truly protected in areas that are uncut.



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Portland, OR 97208-3623

Reply To: 1950

Date:

Margaret Willits
PO Box 478
Arcata, CA 95521

Dear Ms. Willits,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We noted that none of the alternatives presented in the draft matched your preferences for yew harvest, but that Alternative B was perhaps the closest.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You commented on the sensitivity of yew to fire and mentioned Frank Betlejewski's observations that yew survival is significantly increased if the fires used for site preparation are of low intensity. In the DEIS his study is referenced, page III-31 (FEIS page III-30).

You stated that the stream protection zones are not at all an adequate protection for yews and that if logging routinely extends down to 75 feet from the stream then the bulk of yew populations are subject to the cumulative impacts of these processes. Seventy-five feet represents a minimum requirement; the mitigation measure for streamside buffers has been reworded to reflect this (see pages II-56, 60 in the FEIS). Larger buffer zones may be required in areas such as the northern Klamath National Forest. Forest or resource management plans, as well as site-specific analyses, should identify appropriate buffer widths or other areas of protection for particular areas or sites.

You mention that HCA's are excellent areas for preserving yew populations. We agree; all the alternatives, except Alternative G2, prohibit yew harvest in owl conservation areas (including Forest Service HCA's). One value of including



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Alternative G2 in the range of alternatives is to disclose and discuss the impacts of removing yew from Forest Service HCA's and BLM owl conservation areas.

Your observations on the utilization of yew by rodents and mountain beavers are very interesting. We do include a discussion of small animal uses of yew and the use of Pacific yew for browse in "Other Wildlife Relationships." (See page III-80 in the DEIS and III-78 in the FEIS.)

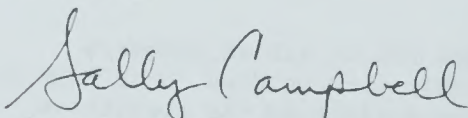
On page four of your response letter you state, "...there is a strong need for considering the cumulative impact of ongoing forest management practices on the Pacific yew even if harvest of bark is stopped on the forests." The impact from harvesting Pacific yew on the timber management program is discussed ("Pacific yew harvest and timber harvests") in Chapter IV of the FEIS. The impacts of proposed timber harvest on the Pacific yew is not addressed in the FEIS; it will be analyzed during forest planning for specific national forests and BLM districts as well as during site-specific analysis on the forest. With regard to your comments on burning: We do address impacts of past timber harvest practices in the cumulative effects discussions in some sections of Chapter IV. We have provided guidelines in the mitigation measures for timber sale units for selection of site preparation methods to minimize damage to residual yew; the mitigation measures also require regeneration to pre-harvest or prescribed levels.

We will pass on your comments regarding "An Interim Guide to the Conservation and Management of Pacific Yew," to the Interim Guide Team. The Final Pacific Yew EIS will supersede the Guide.

Finally, we thank you for sharing your observations concerning Pacific yew. Much needs to be learned about the species and how it functions in the ecosystems of which it is a part. We will pass your observations along to people such as Charles Bolsinger and Stanley Scher and researchers at the Pacific Northwest Forest Sciences Laboratory in Corvallis who have a continuing research interest in the ecological relationships of Pacific yew.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final EIS will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

cc:
Charles Bolsinger
Stanley Scher
Doug Daoust

Dear Sirs, — thanks for the well-done EIS. #64-31593 3/11/93

We have two main concerns: (1) in light of no yew harvest needed this year, Alt. D may be a better alternative than G1, i.e. a better mix of meeting yew protection and demand; (2) we would hate to see reintroduction of fire to the ecosystem limited by yew protection guidelines that are overrestrictive over the next five years. Please don't make the bureaucracy too hard (pg II-72) to plan fire for Forest Health as on pg III-32 (Bettejowski). This Forest Health issue, ^(protect extra types to allow for fire kill) is another reason to implement Alt. D over G1, but with some exceptions for fire included. Appendix L-6 on Aldo Leopold very interesting. Thanks — Bill Forbes



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Bill Forbes
Leopold Club
PO Box 1315
Brookings, OR 97415

Dear Mr. Forbes,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives D and G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comments regarding limiting the reintroduction of fire to the ecosystem: The mitigation measures list site-preparation methods (pages II-56, 57 in the FEIS), including fire, in general order of least to most harmful to residual yew. However, this listing is not intended to be prescriptive; we reworded this measure to reflect this intent. The final choice of method will depend on site analysis. The Pacific yew FEIS also does not prohibit the use of fire to improve forest health; use of fire for forest health will be determined in separate analyses by each national forest or BLM district.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL

Leader, Pacific Yew EIS Team



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#65 31593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? NO TO ALTERNATIVE D
Why or why not? _____

I am concerned about the prioritization of non-sale harvest areas. Priorities will currently be assigned by a criteria that may not be relevant in 10 years - the current "value" of the once "weed tree" yew being a good example.

I prefer Alternative C because: It acknowledges that taxol is a significant + useful anti-cancer drug, but limits the potential of overharvesting. The more area that is opened up for yew harvesting, the greater the potential for illegal harvesting.

What other comments do you have? _____

(Please Print)

Name: MARCUS ROENING ID# (from label) _____
Organization: Tuolumne Audubon Society
Address: 1017 N CEDAR ST
City: TACOMA
State/Province: WA Zip Code: 98406
Country: PIERCE

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Marcus Roening
1017 N. Cedar St.
Tacoma, WA 98406

Dear Mr. Roening,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative C.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Regarding your comment on prioritization of non-sale areas for yew harvest: The guideline for stand prioritization allows for changing objectives and values. (See pages II-61 to II-63 of the FEIS.)

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#66 31593

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

March 10, 1993

Ms. Sally Campbell
USDA Forest Service
PO Box 3623
Portland OR 97208-3623

Dear Ms. Campbell:

Thank you for the opportunity to comment on the draft environmental impact statement (DEIS) for Pacific Yew. We reviewed the DEIS and have the following comments.

1. Haul and/or access roads must meet or exceed state standards per Washington State Department of Ecology and U.S. Forest Service Memorandum of Understanding.
2. Existing road structures should be used.
3. Bristol-Myers has indicated that it will have a synthetic product available by the end of the this year or beginning 1994.

If you have any questions on Comment 1, please call Mr. Bob Penhale with the Water Quality Program at (206) 649-7074. For questions on Comments 2 and 3, please call Ms. Janet Thompson-Lee with the Northwest Regional Office at (206) 649-7128.

Sincerely,

M. Vernice Santee

M. Vernice Santee
Environmental Review Section

2408

MVS:
93-372

cc: Bob Penhale, NWRO
Janet Thompson-Lee, NWRO



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

M. Vernice Santee
State of Washington Dept. of Ecology
Olympia, WA 98504-8711

Dear M. Vernice Santee,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comments regarding haul and access roads: All applicable agreements and MOU's will be followed in project design.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#67 31593

BLACK HILLS AUDUBON SOCIETY

A Washington State Chapter of the National Audubon Society

Mailing Address: P.O. Box 2524, Olympia, WA 98507

March 9, 1993

USDA Forest Service
Pacific Yew EIS Team
P.O. Box 3623
Portland, OR 97208-3623



To the Yew EIS Team:

The following are comments on the Pacific Yew DEIS on behalf of Black Hills Audubon in Olympia, WA. Black Hills Audubon (BHAS) has a special interest in the management of the Olympic National Forest.

With the announcement by Bristol-Meyers Squibb that it does not intend to collect bark from yew on federal lands in 1993, it seems appropriate for the Yew Team to select a new preferred alternative. The argument that collection of yew bark from federal lands is needed to meet the demands for taxol appears invalid for the present, and future needs for yew bark from federal lands are now unclear. There no longer seems to be any justification for the proposed preferred alternative, G1, which poses unacceptable risks not only to Pacific Yew populations but to other species as well. BHAS proposes adoption of alternative B with modifications. This alternative evidently provides more yew bark than required for current therapeutic needs, reduces the amount of yew bark traditionally wasted in the timber sale program and avoids destroying trees in parts of Forest Service and BLM land not already subject to logging. These trees may be needed later. Alternative B should be improved to provide additional protection for both yew and other elements of the forest ecosystem by incorporation of some features from Alternatives C-G1. These include:

1. prohibitions against yew removal (or activities likely to damage yew trees) within 75 feet of streams;
2. creation of yew genetic reserve areas with restrictions on logging and logging-related activities within reserves;
3. replant yew after logging as in the other alternatives, where needed and effective.

Thank you for considering these comments.

Sincerely,

Ann Blekley

Ann Blekley
Forest Subcommittee
Black Hills Audubon Society

3174



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Service

Pacific
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Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Ann Blakley
Forest Subcommittee
Black Hills Audubon Society
PO Box 2524
Olympia, WA 98507

Dear Ms. Blakley,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative B and how it might be modified.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comment regarding the modification of Alternative B:

1. Mitigation measures for all alternatives require that no yew be harvested near perennial streams. The mitigation measures have been revised to require stream buffers of at least 75 feet for all federal lands (in the DEIS, stream buffers in Forest Service Northern Region were 50 feet). See page II-56 in FEIS.
2. We believe genetic reserves are not a necessary part of Alternative B because under this alternative, population levels would remain high enough to ensure the genetic variability and integrity of gene pools.
3. Replanting yew is required in Alternative B. (See mitigation measures for Alternative B, II-55 in FEIS.)



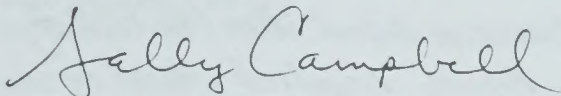
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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

A handwritten signature in cursive script that reads "Sally Campbell". The signature is written in dark ink and is positioned above the printed name and title.

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#68 31593

Mar. 12, 1993

Mrs. Sally Campbell
333 SW First Ave.
Portland, OR 97208-3423

Dear Mrs. Campbell,

I am writing this letter to express my concern about the harvest of the Pacific Yew Tree. I am aware of the issues involved - taxol research for cancer being prominent. I am not against research for new cures for cancer, but I am adamantly opposed to misuse of our forests resources.

Harvesting old growth yew trees strictly for bark seems like a huge waste to me, especially in areas that are not otherwise logged. Yew trees take a long time to grow and I don't think we are fully aware of their place in the forest ecosystem - we have probably only scratched the surface in our knowledge. Taxol can be obtained from trimming tops of old trees - not to the point of destruction. It can also be obtained from the parts of the forest that are being logged anyway. I have seen thousands of yew trees left to rot in clear cut areas. I also understand yew crops are now being planted strictly for harvest for taxol research.

I am also very concerned about a contract that allows a special interest (ie. Bristol Myers Squibb) gaining control of a public resource. I think this is a very bad precedent to set. As most of us are aware, drug research companies do have interest in the public welfare but not nearly as much as it seems in huge profits, no matter what it takes.

I understand that option B, which ~~also~~ allows yew harvest only on plots slated for timber sale and none other, is the most environmentally friendly, and the one that makes the most sense to me, a concerned citizen.

I am sure that within a year or so, suitable sustainable options such as cell culture, synthesis, or trimming of ornamental yews will preclude any need to take old growth trees. It would be such a waste if this valuable resource were squandered by a bad hasty decision because of pressure from a special interest group.

My exhusband used to obtain permits for small amounts of yew trees on land slated for clearcutting. He is a traditional bow builder and we love & respect the Yew tree. This is how I saw such heartbreaking wastes of this resource. He is also a timber stand examiner, with contracts with the forest service, and we became very aware of what's happening with our precious natural resources first hand.

Sincerely,
Catherine Conrad



United States
Department of
Agriculture

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Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

C.A. Council
5810 Colestin Rd.
Hornbrook, CA 96044

Dear Ms. Council,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative B.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS).

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your concern about Bristol-Myers Squibb Company's "gaining control of a public resource," please see the FEIS, Appendix E, for copies of the various agreements between federal agencies and Bristol-Myers Squibb.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#69 31593

Sally Campbell

Pacific Yew EIS Team Leader

USDA Forest Service

Pacific Northwest Region

333 SW First Ave.

P.O. Box 3623

Portland, Oregon 97208-3623

March 9, 1993

Dear Ms. Campbell

Thank you for sending me the "Pacific Yew"
Draft Environmental Impact Statement and Appendices.

After many hours of study and serious consideration,
I strongly favor Alternative B "emphasizing utilization
of Pacific Yew where it would otherwise be wasted."

I was dismayed that you all would recommend

"Alternative B-1." Table 1-1 Comparison of the effects

between Alternatives shows less harm done by

"B" than "B-1" in the following areas:

- + b. landscape & population connectivity
- c. Biology of Yew - seed production
- d. Genetics of Yew - genetic variation, next generation,
- f. Fire - increased fires,
- g. Ecosystem - system & structure,
- + i. Soils - 1 vs 5

- J. Water + Aquatic Habitats
- K. Wildlife - risks in late successional forests + riparian areas
- L. Endangered Species -
- * - M. Spotted Owl - prey species, roosting habitat
- N. Forest Health - since more trees harvested in G1

So, why would you recommend this alternative?

We need to protect the Yew and not exploit it for very limited short term usage. On BT-14 it is stated that in 3-5 years there will be alternative forms of harvest. By the time the studies and reports are done that time will have passed!

We will pay a long term price for a short term benefit. You state, the Yew is not well understood as an ecosystem component in the summary. And that there are many unknowns about this tree, but it likely plays a unique role. And yet, you want to sacrifice it for such a limited short term gain.

And also feel that the G1 recommendation does not adequately provide for sustainable yield.

I don't know what it would take in public input for you to change your recommendation. As a lay person - your documentation is overwhelming. I can only manage to review and understand the summaries and comparison charts. They clearly point to not destroying this tree. In fact I feel it should be protected more than it is already. But - yes if trees will die anyway, let the bark be saved and put to good use.

If someone with cancer wants to try and explore using the bark in a natural form fine, the impact will be little but for God sakes - don't make a drug company industry out of this forest product for greed!

Please keep me informed of the progress of this proposal.

Sincerely,

Robin Kuhn

PO Box 284

Montgomery Creek, CA

94045

P.S. Don't take the "you" personally.



United States
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Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Robin Kuhn
PO Box 284
Montgomery Creek, CA 96065

Dear Robin Kuhn,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives B and G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In regard to your questions and comments concerning why we chose Alternative G1 in the draft EIS: Alternative G1 does carry a higher level of risk to other resources and forest health than does Alternative B. However, the team elected to recommend a higher, but still acceptable (in our opinion) level of risk to accomplish a more efficient harvest of yew to meet the projected need for taxol. Our rationale for selecting G1 as the preferred alternative was based on facts available for analysis at that time.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#70 31593

Idaho Montana Wyoming Oregon Washington Alberta British Columbia

Alliance for the Wild Rockies

Box 8731 Missoula, Montana 59807 • 406-721-5420



Ms. Sally Campbell
Pacific Northwest Regional Forest Service Office
333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Dear Ms. Campbell;

We at the Alliance for the Wild Rockies are writing regarding the Pacific Yew Draft Environmental Impact Statement. I have talked to you on the telephone and you informed me that since Bristol-Myers Squibb has found a synthetic alternative to cutting yew, the project will be about 1/10 its original size. This being the case, I find it impossible to comment on the Draft EIS the Forest Service sent out. It has no relevance to what the actual proposal will be.

It is imperative that the Forest Service come out with a new document that discloses what the new proposals and what the new environmental consequences will be in light of the Bristol-Myers Squibb finding. The new proposals are bound to have entirely different environmental consequences than those revealed in the Pacific Yew DEIS. These environmental impacts must be disclosed in a new EIS. We are very interested in this project and we are glad to see that the Yew is a little safer from the saw.

Please keep us informed on the Pacific Yew project. We would like to remain on the mailing list and we expect to hear what the Forest Service decides to do since it is no longer necessary to cut the Yew tree. Thank you for the opportunity to submit comments.

Sincerely,

A handwritten signature in cursive script, appearing to read "Angie Coffin".

Angie Coffin
Ecosystem Defense

3099



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Angie Coffin
Alliance for the Wild Rockies
Box 8731
Missoula, MT 59807

Dear Ms. Coffin,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS.

In response to your comment that, "It is imperative that the FS come out with a new document that discloses what the new proposals and what the new environmental consequences will be in light of the Bristol-Myers Squibb finding.": We find that the original proposed action and purpose and need are still applicable. The proposed action and need statement has been clarified to reflect the current situation, but the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.) We did not add any new alternatives. The range of alternatives is still reasonable within the scope of the proposed action. Since we have not added any new alternatives, no additional analysis is needed and we find that a new EIS is not necessary.

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#71 31593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? NO

Why or why not? Bristol-Myers Squibb announcement
that bark from public land is not
necessary for clinical trial supplies

I prefer Alternative B because: cut trees from land that
will be cleared should be used for the
clinic

What other comments do you have? Foliage harvest as well as
seed and propagation cuttings opportunities
should be preserved. Pacific Yew research
programs should be continued as a model
and sustainable development of specialty
products from public lands.

(Please Print)

Name: Edward M. Croom, Jr. ID# (from label) _____
Organization: RIPS, School of Pharmacy
Address: University of Miss. ~~State~~
City: University
State/Province: MS Zip Code: 38677
Country: USA

Pacific Yew EIS
Summary



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Edward M. Croom, Jr.
RIPS, School of Pharmacy
University of Mississippi
University, MS 38677

Dear Mr. Croom,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives B and G1.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS.

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You state that foliage harvest, as well as seed and propagation cuttings opportunities, should be preserved: Seed and propagation cuttings will be permitted as allowed by forest plans (Forest Service) and draft resource management plans (BLM). Foliage harvest is allowed wherever the selected alternative allows yew harvest.

You also suggest that Pacific yew research programs should be continued as a model on sustainable development of speciality products from public lands: As you know, a number of researchers currently are investigating various aspects of Pacific yew biology, ecology, and genetics. (See Appendix M, Pacific Yew Research). The magnitude of, and direction that Pacific yew research will take in the future is unknown, but will hopefully be responsive to the changes and needs occurring in forest management.

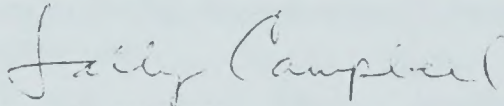


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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#72 31593

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by March 15, 1993. Thank you.

Do you agree with the preferred alternative? No

Why or why not? Any additional impact on ecosystems structure and function is unacceptable.

I prefer Alternative B because: it provides adequate TAPOL, particularly in view of the success of recent synthesizing developments. There is less impact on the ecosystem and less risk of loss of diversity. Also much less impact on soils and moisture retention.

What other comments do you have? Clearcuts should never have been allowed in the first place. Instead of boom and bust we could have had a sustainable industry. Instead of huge machines we could have had small machines and more jobs for people. The total impact on human life has not been fully assessed.

(Please Print)

Name: FLORENCE A. PETERSON ID# (from label) 3666

Organization: NONE

Address: 1745 SE JACKSON ST

City: ROSEBURG

State/Province: OR

Zip Code: 97470

Country: USA

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Florence A. Peterson
1745 SE Jackson St.
Roseburg, OR 97470

Dear Ms. Peterson,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternative B.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#73 31593

NaPro BioTherapeutics, Inc.

Biomass Operations

2511 W. 6th Avenue
Eugene, OR 97402
(503) 686-3332
(503) 686-3334 (fax)

March 11, 1993

Sally Campbell
Pacific Yew EIS Team Leader
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Re: Comment on Pacific Yew Draft Environmental Impact Statement (EIS), January 1993

Dear Ms. Campbell:

NaPro BioTherapeutics, Inc. (NaPro) is very interested in management of the federal Pacific yew resource. The enclosed comments are made considering our position as a current purchaser of private yew biomass and a prospective purchaser of federal yew biomass.

NaPro currently uses Pacific yew biomass to extract and manufacture Taxol and related taxane formulations for the research and treatment of patients with cancer, following the U.S. Food and Drug Administration's process for Investigative New Drugs. The company operates under a managed and controlled pharmaceutical development program to produce Taxol and taxanes for both pre-clinical and clinical trials as per US CFR Title 21 (The Food, Drug and Cosmetic Act).

The following statements represent NaPro's comment to the draft Pacific Yew EIS:

1. We would like to commend the three cooperating agencies for producing a very thorough and effective draft EIS.
2. The final Pacific Yew EIS must be completed, regardless of the current status whereas Bristol Meyers-Squibb (BMS) will not be harvesting federal yew in 1993. Sizeable quantities of yew are being utilized by BMS and NaPro. Research organizations may insist on access in 1993. Considerable yew harvest pressure placed on state and private forests in 1993 may subsequently translate into greater demand for federal yew sources in 1994 and beyond.
3. The final Pacific Yew EIS should address sale of Pacific yew to qualified Taxol manufacturers (subject to conditions of the Pacific Yew Act), rather than being directed only to BMS. NaPro now qualifies to utilize federal yew under the terms of the Pacific Yew Act and should now have access to federal yew purchase in 1993 and beyond.
4. Let economic efficiency govern the types of yew biomass utilization required (needles, limbs, bark, wood, etc.), rather than regulating the harvest and removal of all yew tree biomass. Cost effectiveness and available technology may not allow for whole tree harvest in all situations at this time. Taxol extraction technology is evolving over time.

5. Include provisions for needle/bough utilization in the future. Available technology and commercialization of Taxol extraction from needles will increase utilization and yew resource sustainability in the future although delays in obtaining regulatory approval may occur.

6. Consider and address sustainable yew biomass harvest beyond the three to five year period defined in the draft EIS. Sustainable yew harvest of needles from federal forests and tree biomass harvested from timber sale units can be prudent and viable beyond the five-year term. Extraction of Taxol and taxane compounds from the renewable forest yew resource may remain economical even in the presence of alternative Taxol sources in the future.

7. NaPro concurs with the Forest Service and BLM Preferred Alternative G1. This alternative represents an efficient combination of yew biomass utilization and protection of forest ecosystem values. The agencies must consider that the maximum quantities specified for the selected alternative may not necessarily be realized by the yew manufacturer demand.

8. Alternative A is unacceptable. This is due to potential waste of the yew resource in timber sale units, and because of no additional measures for yew regeneration, no genetic reserves, no harvest for Taxol production, and no yew protection.

Thank you for this opportunity to comment. Should you have further questions about NaPro's position or these comments, please do not hesitate to call me at 503/686-3387, or Dr. Sterling Ainsworth, Chairman and Chief Executive Officer, at 303/444-9406.

Sincerely,



Rex D. Storm
Director of Biomass Operations

Encl

RDS/ayo



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Rex D. Storm
Director of Biomass Operations
2511 W. 6th Avenue
Eugene, OR 97042

Dear Mr. Storm,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives A and G1.

The following are responses to your numbered comments:

1. Thank you for complimenting us on the draft EIS. We appreciate the positive input.
2. Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of individuals or companies, such as yours, may request relatively small quantities of yew bark or needles for research and development purposes.
3. Under current law (Pacific Yew Act of 1992), sale of yew for commercial purposes can be made only to those parties that are in accordance with Section 505 of the Federal Food, Drug and Cosmetic Act (21 USC 355). Yew that is purchased, but not utilized by the purchaser (e.g. needles, twigs, wood), can be sold to others for commercial use. For research purposes, the Forest Service has the option to dispose of yew in accordance with FS regulations.
4. The EIS looks at a fairly wide range of harvest options and locations. None of the alternatives (except Alternative A) limit the part of the yew tree utilized. As you commented, economics and available technology will dictate the type of biomass collected. (See Description of Alternatives, Chapter II.)
5. Needle and limb harvest are permitted in all action alternatives (See Description of Alternatives, page II-19 and Mitigation Measures, II-55 in FEIS).
6. The EIS addresses a five-year harvest program, however, we have included some additional information on sustainable yield of Pacific yew. See pages III-7 and IV-7 in the FEIS.



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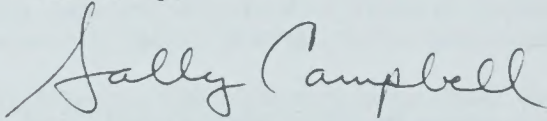
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7. As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

8. We have noted your comments concerning Alternative A.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



#74 31693

THE WILDERNESS SOCIETY

OREGON REGION

March 15, 1993

Sally Campbell, Forest Service
Pacific Yew EIS Team Leader
USDA Forest Service
P.O. Box 3623
Portland, OR 97208-3623

Dear Ms. Campbell:

These are The Wilderness Society's comments on the Draft Environmental Impact Statement (DEIS) for the Pacific Yew harvest program.

The Changing Landscape

The Bristol-Myers Squibb Pharmaceutical company announced that "we do not plan to harvest Pacific yew bark from federal lands in 1993" (Statement of Zola Horovitz before the Committee on Small Business, U.S. House of Representatives, January 25, 1993). It appears Bristol-Myers Squibb will rely on a semi-synthesis process which utilizes the twigs and needles of yew trees. The source of this yew material appears to be European and Himalayan yews. Future yew material may be obtained from the Weyerhaeuser company, which agreed with Bristol-Myers Squibb to plant 5 million yew seedlings (Eugene Register-Guard, January 30, 1993). This situation should dramatically alter several key assumptions in the DEIS including the demand and supply analysis. More importantly, this changing landscape may void the necessity for a Pacific yew bark collection program.

A Critique of the DEIS

The DEIS can be criticized both for what it does and for what it does not do. Despite the impressive weight and thickness of the document, the DEIS is extraordinarily poor in information content. Part of this can be attributed, as is done repeatedly throughout the DEIS, to a general lack of inventory information and ecological knowledge about Pacific yew, but it also appears to be due to a fundamental failure on the part of the participating agencies to appreciate the potential impacts of their proposed actions on this critically important species or the ecosystems that support its existence.

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Pacific Yew DEIS comments
The Wilderness Society, March 15, 1993
Page 2

The following critique of the DEIS focuses on both fundamental failings of the approach and the generally poor handling of information regarding Pacific yew. We will criticize what the document discloses, what it does not disclose, and what it cannot disclose. This information, considered together with the recent announcement by Bristol Myers-Squibb, argues for harvest levels greatly reduced from the preferred alternative.

Fundamental Flaws

Overall, the DEIS demonstrates a basic lack of appreciation for impact assessment. The DEIS devotes an extraordinary amount of space to simply restating the alternative prescriptions under the guise of impact assessment. For example, the analysis of the impact of yew harvest on yew populations amounts only to a restatement of alternative harvest levels. No real attempt is made to describe the effects on the population resulting from each treatment. This pattern is repeated throughout the document where, in the absence of information on the species or its ecosystem, impact is taken only to mean harvest prescriptions. This deficiency is illustrated well by a quotation from page IV-87 regarding effects on wildlife:

"Because of the lack of information regarding yew's role in the ecosystem, this discussion is based primarily on comparisons of the magnitude of effects for each alternative. We are unable to provide concrete facts and figures at this time."

The DEIS declines to assess the impact of specific collection methods on the environment, instead deferring to future "site-specific analyses" (p. II-7). This results in an DEIS that is devoid of discussion of many of the important effects of yew harvest, such as fire and insect hazards resulting from slash build-up and soil effects of various harvest methods. Methods of yew harvest, however, are not so diverse that their effects could not be treated comprehensively in this document. Simply mentioning, for instance, that needle harvest could involve large machinery which might compact soils (p. IV-83) does not suffice as impact assessment.

The DEIS also exposes a basic lack of understanding of the fundamentals of the maintenance of biological diversity. For example, the discussion of indirect effects of Alternative A on biodiversity (p. IV-74) is nonsensical:

"The equilibrium of systems where Pacific yew is harvested could be altered. Ecological equilibrium refers to the balance that exists between living organisms and their environment. After disturbance, these systems would reach a different equilibrium which may or may not be less stable."

If the same functions, habitats, and structures provided by yew could be provided by a better-adapted alternate species, equilibriums (sic) may become more stable."

The "impacts" of leaving yew trees alone following harvest of overstory species are considered to be "moderate".

By comparison, the impacts of Alternative B, in which trees are felled and peeled, is considered "minor". While ecological principles might be invoked to substantiate such a conclusion, they are not here, and the discussion of biodiversity only exemplifies how poorly understood the concept is by those purporting to protect it.

What the DEIS Tells Us

Despite the generally deficient information within the document, the DEIS does contain clues to an appropriate direction for management of Pacific yew. In general, Alternatives A and B are described to be the best for both the yew and for other resources. Additionally, the preferred alternative (PA) is shown to have several undesirable characteristics.

Alternatives A and B are described as posing a low risk to landscape pattern, having no or minor effects on yew genetics, causing only minor increases in the risk of fire occurrence, and posing a low risk of negative impact on ecosystem structure and function. Additionally, Alternatives A and B have the least impact on soils and only these alternatives have no impact on water and aquatic habitat. Impacts on wildlife and threatened and endangered species habitat is minimal, and only Alternatives A and B are described as having no impact on spotted owl roosting habitat. In terms of the impacts that were assessed, however cursorily, Alternatives A and B clearly have the least impact on the environment.

In contrast, the PA poses a moderate risk to landscape connectivity and has potentially moderate impacts on yew genetics and seed production. The PA runs the risk of increasing fire occurrence, poses a moderate risk to ecosystem structure and function, and is likely to impact wildlife in late successional forest. The DEIS considers the risks to spotted owl prey and roosting habitat to be "moderate to high."

According to the DEIS, current processing capacity is only 1.95 million pounds of bark per year (p.IV-6). Annual bark harvests from National Forests and BLM lands under all alternatives except for A (0 lbs.) and B (520,000 lbs/year) are in excess of this. It is unclear how the supply in excess of capacity will be processed. The DEIS acknowledges that Alternative B would supply enough bark in combination with bark

Pacific Yew DEIS comments
The Wilderness Society, March 15, 1993.
Page 4

from non-federal lands to meet current demand.

Additionally, the entire program in 1991 provided only 571 jobs (p.III-121), equivalent to the level of employment provided under alternative D. Under the PA, job creation would be less than twice this level. Alternative B is expected to provide up to 113 seasonal jobs (p. IV-123), resulting in the loss of fewer than 500 seasonal jobs, region wide, if this alternative is selected. The alarming dearth of information on this vital species suggests that at least this many positions should be created in yew inventory and monitoring and funded by the federal government or the drug industry.

Specific Deficiencies of the DEIS

The DEIS acknowledges (p. III-88) that new roads may be constructed where they do not currently exist (i.e. roadless areas) to facilitate yew bark harvest. Road and trail construction are known to cause increased sedimentation, dust, and noise (p. IV-108). Sedimentation is known to degrade the habitat of many species of native fish, including threatened anadromous salmonid species. Some of the forests supporting the highest densities of Pacific yew are also the last holdouts of many of these threatened stocks. Nevertheless, the DEIS concludes (p. IV-85) that logging in riparian areas may have a "favorable effect" by adding woody debris to the aquatic system. Any negative effects are considered to be temporary because they would be "unnoticeable within a couple of years." Such glib dismissal of critical environmental impacts is inappropriate.

The assessment of the impacts of Port-Orford-cedar root disease (*Phytophthora lateralis*) is wholly inadequate. It considers only the impacts of the disease on the Pacific yew and completely ignores the impacts of the proposed actions on Port-Orford-cedar. Port-Orford-cedar is now so threatened by the disease that elaborate (and unproven) protocols have been established simply to operate in its presence (see Appendix C). Logging of Pacific yew in the presence of Port-Orford-cedar presents tremendous risk to the latter, even if risks to the former are minor. Rather than continue to risk the future of Port-Orford-cedar through the use of an unproven mitigation protocol, the Forest Service and BLM should simply ban timber harvest from watersheds uninfected by the disease.

Assessment of environmental impacts is further clouded by inadequate inventory. The DEIS merely reports numbers of trees and pounds of bark that could be harvested under various alternatives. Nowhere is there an adequate description of the inventory, including the population structure of yew at the landscape or stand level. Only the table on page 21 of Appendix F provides information on population structure, and this is for

state and private lands not covered by the DEIS. Figure III-1 presents only meaningless "examples" of stand structures. Without information on population structure, it is impossible to determine how harvest, especially harvest that concentrates on the largest individuals, will affect the Pacific yew or its ecosystem.

The determination of sustainable harvest level (Appendix F-22) is simply negligent. The sustainable level is calculated as the number of harvestable trees (20.3 million -- an estimate that appears nowhere else in the document) divided by 100 (the number of years needed to grow a harvestable tree -- in this case 6 inches in diameter at the stump (Table III-4)). This assumes that "the first areas harvested would regenerate and be ready for a second harvest in 100 years." Under this scenario, the entire harvestable population would be converted to trees less than 6 inches in diameter over the next century. Thus, the existing population structure would not be sustained, nor is there any guarantee that the yield of bark would be maintained over time. Additionally, this approach assumes, inappropriately, that the yew population would be unaltered by other management activities, such as timber harvest, within the range of the species.

The U.S. Congress has been very engaged in the Pacific yew issue including conducting hearings and passing legislation. Information describing Congressional involvement and intent would assist the public in better understanding the issues and legal requirements surrounding Pacific yew management on federal lands. Although the DEIS briefly discusses the Pacific Yew Act of 1992, it does not provide the text. Congress also provided direction to federal agencies on Pacific yew issues in the Appropriations bill for Fiscal Year 1992. The final EIS should include the complete text of all federal laws pertaining directly to Pacific yew management.

Conclusion

The Draft Pacific Yew EIS could have been undertaken as a state-of-the-art assessment of the biology and management of an important non-timber resource. Instead, it appears to have been undertaken hastily without serious consideration of even the fundamentals of species biology, such as growth and yield estimation.

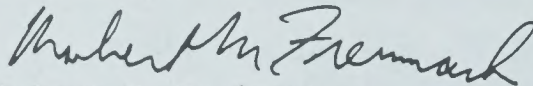
The uncertainty surrounding the inventory and ecology of Pacific yew and the uncertainty over the future need for bark-derived taxol argue for a much more cautious approach to yew harvest than that proposed under the preferred alternative. Given the recent announcements of Bristol Myers-Squibb's successful semi-synthesis, the selection of Alternative A (no action) does not appear unreasonable. If a collection program is

Pacific Yew DEIS comments
The Wilderness Society, March 15, 1993
Page 6

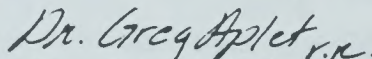
necessary, of the Alternatives presented only Alternative B could be prudently selected given the information in the DEIS.

However, we believe the assumptions underlying the DEIS have changed so dramatically that the entire DEIS needs substantial revisions. We recommend that a new DEIS (or a supplemental DEIS) be developed and made available for public comment. This new DEIS should examine if a Pacific yew harvest program on federal lands is necessary and/or desirable as well as addressing the concerns we have discussed in these comments. In addition, the federal government should institute a coordinated, comprehensive research program into the ecology and genetics of this vital species. Only after a basic foundation of knowledge has been established will it be possible to assess the environmental impacts of any Pacific yew harvest program.

Sincerely,



Robert M. Freimark
Assistant Director, Oregon



Dr. Greg Aplet
Forest Ecologist



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Robert M. Freimark, Assistant Director
Dr. Greg Aplet, Forest Ecologist
Wilderness Society
610 SW Alder, Suite 915
Portland, OR 97205

Dear Mr. Freimark and Mr. Aplet,

Thank you for responding to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who responded to the draft EIS; we appreciate the time and thought.

In the section, "A critique of the DEIS" you state that the recent announcement by Bristol-Myers Squibb and both the information disclosed and the information missing in the DEIS, argues for reduced harvest levels from the preferred alternative. Bristol-Myers Squibb's recent announcement that they no longer need wild yew from federal lands has, as you point out, impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement have been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

Under "Fundamental Flaws" you mention lack of knowledge about how harvesting yew will impact wildlife: The purpose of the EIS is to disclose, given the available information, the overall effects of several alternative yew harvest programs. Disclosing deficiencies in knowledge and information is part of this. Although it is not possible to make precise quantitative estimates of effects on wildlife populations, many effects can be evaluated on a more general level. These effects are described Chapter IV (FEIS pages IV-82 to IV-101) and in Appendix J. In addition, more detailed effects would be described for site-specific projects.



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Also under "Fundamental Flaws" you voiced concern that "simply mentioning...that needle harvest could involve large machinery which might compact soil does not suffice as impact assessment:" At present, a well-defined method of harvesting only needles does not exist. Needle harvest could mean impacts from people or, because of the economics of harvesting, might entail a machine designed to strip needles. The final assessment would be made at the local level for the particular site involved.

In response to your comments, we clarified the paragraph about ecological equilibrium. See the FEIS page IV-69.

In response to your comment about the lack of information about yew under the section "What the DEIS Tells Us:" We carefully considered your comments regarding Alternatives A, B, and G1. As stated above, Alternative B has been identified as the preferred alternative for the final EIS.

In response to your comment about yew bark processing capacity: Because a given alternative describes a yew bark harvest quantity in excess of current processing capacity, it does not mean that the described level of harvest must occur. NEPA requires, and decision-makers expect, a broad range of alternatives.

In the section "Specific Deficiencies of the DEIS," regarding roads and trails: Areas already accessible by road systems would most likely be considered first for yew harvest, due to time and cost considerations. As you say, roads increase sedimentation, but use of existing road networks will not create increased sedimentation unless it involves reconstruction or there are road failures within close proximity to streams.

When incorporating yew harvest into timber sales, it is highly unlikely that one could separate the effects of the yew harvest from those of the timber sale which would be several orders of magnitude greater. In addition, there is the provision for no yew harvest within 75 feet of perennial streams in Alternatives B through G2 which further reduces the risk to streams.

Also in the section "Specific Deficiencies of the DEIS" you state that the assessment of the impacts of Port-Orford cedar root disease is inadequate: Impacts of Port-Orford cedar disease on its primary host were considered. In the DEIS we stated that no yew would be harvested in areas containing Port-Orford cedar without a project analysis (which includes a risk analysis of the project activities on Port-Orford cedar) as prescribed in the Forest Service and BLM Port-Orford cedar management plans. What we failed to make clear is that the risk to Port-Orford cedar as well as yew is covered under these plans. We made this clarification in the FEIS, page IV-46. It is beyond the scope of this EIS to revisit and change the decisions made in the Port-Orford Cedar Management Plan.

The graph in Chapter III (Figure III-1) has been changed and now shows the diameter distribution for all inventoried yew in National Forest system lands in Oregon and Washington. Also, we included more extensive numerical descriptions of the diameter distribution for each of the three inventories in Appendix F.

We have clarified our description of sustained yield. See Chapter III-7,8 and Chapter IV-7,8.

We included The Pacific Yew Act of 1992 in the FEIS. It is Appendix N.

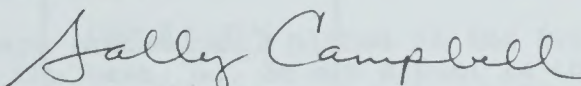
In response to "Conclusions:" We noted your preference for Alternatives A or B; Alternative B is identified as the preferred alternative in the FEIS.

You recommend that a new DEIS or a supplemental DEIS be developed and made available for public comment: We did not prepare a supplemental DEIS. We find the original proposed action and purpose and need still applicable. We have clarified the proposed action and purpose and need to reflect the current situation, but the changes made for clarification are minor (see the FEIS pages I-2 to I-5). We also find the range of alternatives still reasonable given the scope of the identified need.

You state the federal government should institute a coordinated, comprehensive research program into the ecology and genetics of the yew species: A number of researchers are currently investigating various aspects of Pacific yew biology, ecology, and genetics (see Appendix M: Pacific Yew Research). Yew has been added to the list of species tallied and measured in Forest Service and Bureau of Land Management inventory programs.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final environmental impact statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL

Leader, Pacific Yew EIS Team

MAR-15-1993 16:58 FROM UCFLPL

TO 915033262469 P.01

BIORESOURCES RESEARCH CENTER

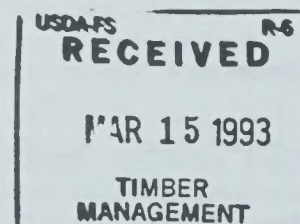
FOREST PRODUCTS LABORATORY

1301 South 46th Street
Richmond, California 94804
FAX (510) 231-9535

#75 31593

| | | | |
|-----------------|----------------|---------------|-------------------------|
| TO: | SALLY CAMPBELL | FROM: | STAN SCHER 2895 |
| | | DATE: | 15 MARCH 93 |
| FAX: | 503-326-2469 | PAGES: | 3 (including this page) |
| SUBJECT: | DEIS COMMENTS | | |

If you have problems with this transmission, please call (510) 231-8292



Stanley Scher
Bioresources Research Center,
Forest Products Laboratory,
University of California,
Berkeley, CA 94720

14 March 1993

Sally Campbell, Team Leader,
Pacific Yew EIS Project
USDA Forest Service,
Portland OR 97208-3623
FAX 503-326-2469

Dear Sally and other EIS team members:

I am writing to offer some comments on the Draft EIS. First I wish to call attention to some errors in the document that are easily correctable before the final EIS is prepared. Next, I would like to identify potentially serious errors in the NEPA process that may not be so easily correctable, but requires responses from the USDA Forest Service, BLM and FDA.

There are several places in the Draft EIS where authors are cited in the text, but do not appear in the list of references. Examples include: III-21, Steinfeld, 1992; III-25, Millar, 1991; III-31, Green and Ward, 1991; III-66, Yanchuk, 1992; III-87, Sampson and Malmstein, 1975; III-126, Heizer, 1978.

On III-14 and III-19, your definition of layering is overly restrictive. It should be expanded to include stems that are toppled by nearby trees and other disturbances.

Now to the more serious issues: the NEPA process. FDA commissioner David Kessler commented that taxol was the first case in which an environmental impact statement (EIS) was required for (approval of) a new drug. I question whether the timing of the FDA approval of taxol compromised the National Environmental Policy Act (NEPA) in the rush to approve the drug.

NEPA requires an EIS when a Federal Agency proposes an action that may have a significant impact on the environment. Under NEPA, agencies must first release a draft EIS for public comment before the final EIS is issued. But federal land management agencies (USDA Forest Service and BLM) permitted significant harvesting of Pacific yew years before these agencies began to draft the EIS. Late last year--29 December 1992--FDA approved taxol before the draft EIS was released for public comment--8 January 1993. Accordingly, FDA's approval was issued prematurely, circumventing the public involvement process. Thus, the public was denied access to the process.

MAR-15-1993 16:59 FROM UCFPL

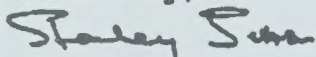
TO

915033262469 P.03

A second issue relates to objectivity: How can FDA serve as an objective reviewer in an approval process when they are one of the participating agencies?

I look forward to your response(s).

Sincerely,



STANLEY SCHER, PHD.

TOTAL P.03



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Stanley Scher
Bioresources Research Center
Forest Products Laboratory
1301 South 46th Street
Richmond, CA 94804

Dear Mr. Scher,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who responded to the draft EIS. We appreciate your interest in the environment, the development of taxol, and the viability of the Pacific yew tree.

We checked the places in the draft where authors are cited in the text, but do not appear in the list of references; we corrected the discrepancies -- thanks for pointing them out.

In response to your concerns about the NEPA process: The FDA requires an environmental assessment (EA) for the approval of a drug. Because they were approving taxol from Pacific yew bark, some assessment of the environmental impact of obtaining this source was required. The FDA incorporated the Pacific yew draft EIS by reference into its environmental assessment to fulfill this requirement. FDA's regulation allows the EA portion of an NDA to incorporate by reference "information presented in other documents that are available to FDA and to the public." (21 CFR Sec. 25.319c)).

In previous decades, Pacific yew trees were judged to have little or no economic value and were routinely destroyed during harvest operations for commercial species. NEPA documentation was completed for the timber sale areas where most of the yew has been harvested in sizeable quantities since the late 1980's. The yew harvest was guided by the 1992 Interim Guide to the Conservation and Management, and the 1993 revised Interim Guide of Pacific Yew, until this EIS was completed. The Pacific Yew Act of 1992 requires additional considerations for yew protection and utilization where it is present on federal lands. The FDA approval of taxol relied on the information in this EIS, but your concern about the prematurity of the FDA decision is beyond the scope of this EIS. We have forwarded a copy of your letter to the FDA.

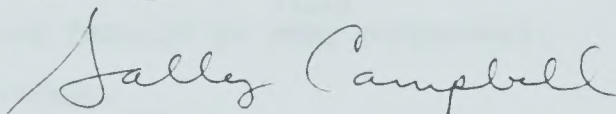


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We hope these responses will satisfy your concerns. Thank you again for your interest you have in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

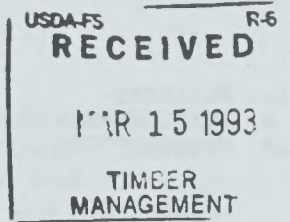
cc:
Phil Vincent, FDA

To: Sally Campbell, Yew EIS Leader

From: Neil S. Kagan

3-15-93 4:24pm p. 1 of 6

#76 31593



To: Sally Campbell, Yew EIS Leader

Date: 3-15-93

From: Neil S. Kagan

Page 1 of 6

To: Sally Campbell, Yew EIS Leader

From: Neil S. Kagan

3-15-93 4:24pm p. 2 of 6

NEIL S. KAGAN
ATTORNEY AT LAW

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522 S. W. Fifth Avenue
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Telephone
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March 15, 1993

FAXED AND MAILED

Sally Campbell
Pacific Yew EIS Team Leader
USDA Forest Service
Pacific Northwest Region
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Portland, Oregon 97208-3623

Re: Pacific Yew Draft Environmental Impact Statement

Dear Sally:

I am writing on behalf of the Oregon Natural Resources Council, the Pilchuck Audubon Society, and Greater Ecosystems Alliance to comment on the Pacific Yew Draft Environmental Impact Statement. Thank you for allowing me to file my comments today by fax. I will also mail this original so you will have a more legible document.

Chapter I -- Purpose and Need

Circumstances have changed significantly since the Forest Service and Bureau of Land Management proposed an intensive 5-year program to harvest Pacific yew bark from their lands. In particular, Bristol-Myers Squibb has decided to secure taxol from sources other than federal lands. That decision demonstrates that the DEIS misidentified the need for the proposed action as a need for an immediate supply of Pacific yew bark.

The real need for the proposed action was the need for taxol. Despite BMS's decision, taxol continues to be needed, and may even be needed in greater quantities in the future should the drug continue to prove effective in the treatment of cancer. The Pacific yew, of course, is a proven and reliable source of taxol. Therefore, the Pacific yew is still an important source, even though there is no longer an immediate need for it.

BMS's decision thus obviates the proposed action, but not the Pacific yew. The Pacific yew no longer needs to be killed for its bark, either within or without timber sale boundaries. The Pacific yew and the ecosystem that fosters and sustains it, however, must be protected to ensure the Pacific yew's availability over the long

Ms. Campbell
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Page 2

term. This is required both by the Pacific Yew Act ("the Act") and by Forest Service regulations implementing the National Forest Management Act ("NFMA"). Pacific Yew Act, § 3(a)(1) and (2), 16 U.S.C. § 4802(a)(1) and (2) (1992) (Forest Service and BLM must provide for the sustainable harvest of Pacific yew, and conserve wild Pacific yew populations over the long term); 36 C.F.R. §§ 219.9 and 219.27 (Forest Service must provide for the regeneration of Pacific yew trees and maintain the Pacific yew in the plant community located on National Forest lands).

These circumstances compel the preparation of a supplemental DEIS. 40 C.F.R. § 1502.9(c)(1)(ii) ("Agencies . . . [s]hall prepare supplements to . . . draft . . . environmental impact statements if . . . [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts"). They also compel a revision of the scope of the issues and the significant issues the DEIS must address. 40 C.F.R. § 1501.7(c) ("An agency shall revise [the scope of an EIS] . . . if significant new circumstances or information arise which bear on the proposed action or its impacts").

Chapter II -- Issues, Alternatives, and Comparisons

A revision of the scope of the DEIS would have been necessary even had circumstances not changed, because the DEIS omitted some very important issues raised by the Act and NFMA regulations. These issues include the Forest Service's and BLM's obligation to provide for the sustainable harvest of Pacific yew; to provide for the long-term conservation of the Pacific yew in the wild; to use individual Pacific yew trees with little or no waste; to harvest bark first; and to carry out timber management and harvest activities in a manner that will minimize adverse effects on the survival and regeneration of Pacific yew trees. Pacific Yew Act, §§ 3(a)(1)-(2), 3(b)(2), (3), and (5), 16 U.S.C. §§ 4802(a)(1)-(2), 3(b)(2), (3), and (5); 36 C.F.R. §§ 219.9 and 219.27. These issues are important, because they affect the alternatives the DEIS must consider.

For example, take the Act's requirement that the Forest Service and BLM conserve wild Pacific yew populations over the long term. Pacific Yew Act, § 3(a)(2), 16 U.S.C. § 4802(a)(2). That duty is independent of duties imposed by existing laws, including NFMA and the Federal Land Policy and Management Act ("FLPMA"). Consequently, the Forest Service and BLM must conserve Pacific yew in the wild whether or not existing land and resource management plans require such conservation, and may have to revise the plans' land use designations to achieve that objective. That issue must be addressed, whether or not a supplemental DEIS is prepared.

Whether or not a supplemental DEIS is prepared, the range of

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alternatives must be broadened, too, especially to include sources of taxol other than Pacific yew bark. The DEIS attempted to justify its failure to consider such alternatives by observing that the only FDA-approved process for taxol production is extraction of taxol from Pacific yew bark. That should not limit the alternatives, however.

Federal agencies must rigorously explore and objectively evaluate all reasonable alternatives, including reasonable alternatives not within the jurisdiction of the lead agency. 40 C.F.R. §§ 1502.14(a) and (c). Since Pacific yew needles and twigs can provide a perpetual, sustainable source of taxol for victims of cancer well into the future, a "needle and twig" alternative that neither kills the tree or destroys the surrounding environment -- in timber sale units, partial-cut sale units, non-sale areas, or owl conservation areas -- must be constructed and considered.

The DEIS also erroneously discarded an alternative calling for an even-flow harvest of Pacific yew over a 100-year period, deeming such a supply unnecessary because alternative sources of taxol will be developed within three to five years. Nevertheless, the DEIS should not have discarded long-term even-flow harvest of Pacific yew, because the Act specifically calls for sustainable harvest of Pacific yew. Pacific Yew Act, § 3(a)(1), 16 U.S.C. § 4802(a)(1). In addition, the Pacific yew constitutes a proven and reliable backup source of taxol, which may yet be necessary if the demand for taxol outstrips the supply from other sources.

Other alternatives must be considered, as well. For instance, the DEIS should have considered at least one alternative protecting some percentage of the utilizable Pacific yew found in timber sale units.

The DEIS should also have considered an alternative to the Forest Service's and BLM's current approach to forest management, and treated the Pacific yew on at least an equal footing to timber harvest goals. Specifically, the DEIS should have considered an alternative requiring special harvest techniques in Pacific yew areas -- eliminating clearcuts, for example. After all, the Act requires the Forest Service and BLM to carry out timber management and harvest activities "in a manner that will minimize any adverse effects on the survival and regeneration of pacific yew trees." Pacific Yew Act, § 3(b)(5), 16 U.S.C. § 4802(b)(5). Pacific yew may be able to survive and regenerate in clearcuts, but clearcuts do not provide the optimum environment for the growth of, or concentration of taxol in, Pacific yew trees.

As for the alternatives the DEIS did consider, none set standards for the recovery of Pacific yew bark. Rather, alternatives C through G2 allow individual Forest Service regions,

Ms. Campbell
March 15, 1993
Page 4

national forests, and BLM districts to set their own standards for the utilization of Pacific yew bark, with no assurance that the environmental impacts of the chosen standards will be assessed or disclosed in a region-, forest-, or district-wide EIS. DEIS II-61.

The second chapter of the DEIS concluded with a listing of mitigation measures, but the DEIS failed to analyze the effectiveness of those measures. The discussion of mitigation had to reveal how well the measures that might be used would work. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 352, 109 S.Ct. 1835, 1847 (1989). "Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects." *Id.* Accordingly, the mere listing of mitigation measures did not suffice. Oregon Natural Resources Council v. Marsh, 832 F.2d at 1493 (9th Cir. 1987), rev'd on other grounds and remanded, 490 U.S. 360, 109 S.Ct. 1851 (1989); Northwest Indian Cemetery Protective Ass'n v. Peterson, 764 F.2d 581, 588 (9th Cir. 1985), on rehearing, 795 F.2d 688 (9th Cir. 1986), rev'd on other grounds, 485 U.S. 439, 108 S.Ct. 1319 (1988).

Moreover, ONRC et al. take issue with the Forest Service's and BLM's intention to allow the destruction of Pacific yew in areas without enough Pacific yew to establish a genetic reserve. The Interim Guide to the Conservation and Management of Pacific Yew (USDA Forest Service, Pacific Northwest Region, Mar. 1992) ("the Guide") -- the most authoritative and comprehensive treatment of Pacific yew conservation measures to date -- banned any harvest of Pacific yew in areas where genetic reserves cannot be established.

Chapter IV -- Environmental Consequences

I appreciate that information about the Pacific yew is scarce because, until recently, neither the Forest Service nor the BLM placed any value on the species. I therefore understand that the EIS team was required to make assumptions in predicting the effects of the various alternatives. Since there is an admitted dearth of information, though, as well as uncertainty about the stability of current conditions, a reasonable range of assumptions should have been considered, and a corresponding range of environmental impacts described. In that way, both the public and the decision-makers would be better informed about the consequences of real-world deviations from the team's best professional judgment. In addition, the basis for all undocumented assumptions should be explained.

Finally, the DEIS's discussion of environmental consequences is short on detail. Throughout, the DEIS describes impacts or risks in a purely qualitative way, as "low," "minor," "moderate," or "high," for example. The EIS must substitute more concrete,

To: Sally Campbell, Yew EIS Leader

From: Neil S. Kagan

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quantitative analyses for these subjective descriptions of environmental consequences to fully inform the public and the decision-makers.

Conclusion

The significant change in circumstances wrought by BMS's conversion to taxol sources other than the Pacific yew requires a complete overhaul of the DEIS. In the process, the DEIS's deficiencies in addressing issues, considering alternatives, analyzing mitigation measures, and discussing environmental consequences must be corrected. The most important task, however, is to design and recommend a preferred alternative that better meets the requirements of the Pacific Yew Act and the NFMA regulations, which require sustainable harvest of the Pacific yew and perpetuation of the species in the wild for the long-term.

Yours truly,

Neil S. Kagan

NSK/ace

cc: Mark Epstein, ONRC
Andy Kerr, ONRC
Wendell Wood, ONRC
Bonnie Phillips-Howard, Pilchuck Audubon Society
Mitch Friedman, Greater Ecosystems Alliance



United States
Department of
Agriculture

Forest
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Pacific
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Reply To: 1950

Date:

Neil S. Kagan
Attorney at Law
1050 Yeon Building
522 SW Fifth Avenue
Portland, OR 97204

Dear Mr. Kagan,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement on behalf of the Oregon Natural Resources Council, the Pilchuck Audubon Society, and Greater Ecosystems Alliance. We heard from more than 90 people and organizations concerning the draft. After considering all the comments, we made a number of changes to the final environmental impact statement.

In response to your comments about the purpose and need: We agree, circumstances have changed now that Bristol-Myers Squibb Company has decided to secure taxol from other sources. However, we find the original proposed action and purpose and need still applicable. We have clarified the proposed action and purpose and need to reflect the current situation, but the changes made for clarification are minor. See the FEIS pages I-2 to I-5.

The need for the proposed action for this EIS is the need for Pacific yew for taxol production, rather than for taxol (FEIS page I-2). Responding to the broader need for taxol is outside the scope of this EIS.

All alternatives (except Alternative A, the no action alternative) comply with NFMA and the Pacific Yew Act of 1992. Protection of Pacific yew and the ecosystem is dealt with in the alternatives (FEIS page II-19) as well as the mitigation measures (FEIS page II-55). Both alternatives and mitigation measures are fashioned very closely after "An Interim Guide to the Conservation and Management of Pacific Yew" as revised April 1993.

Although we considered your suggestion, we did not analyze in detail any new alternatives. The range of alternatives remains reasonable within the scope of the identified purpose and need (see the FEIS page I-2).

We will not be preparing a supplemental DEIS (see 40 CFR 1502.9(c)(1)(ii)). We find the original proposed action and purpose and need still applicable. Although demand for Pacific yew has dropped, we have determined that this does not constitute significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. The issues are still relevant to the current proposed action.

In response to your comments about the Forest Service and BLM's obligation to provide for the sustainable harvest of Pacific yew, long-term conservation of the yew in the wild, to waste little of each tree, to harvest bark first, and



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to minimize adverse effects on the survival and regeneration of Pacific yew trees: The Forest Service and BLM are following the Pacific Yew Act of 1992 and NFMA regulations that call for all of the above protections. We rewrote the discussion of sustainability of Pacific yew in Chapters II and IV (pages III-7, IV-7) to better explain sustainability of the species, sustained yield, and even- and uneven-flow harvest regimes. Protection of the yew is built into the proposed Alternatives B through G2 with no harvest allowed in specially designated areas such as wilderness and natural research areas, in riparian areas, or in genetic reserves for yew (Alternatives C through G2).

You state that "whether or not a supplemental DEIS is prepared, the range of alternatives must be broadened, too, especially to include sources of taxol other than Pacific yew bark." In response to your comment and comments from others asking that we consider a needles only harvest, we considered such an alternative, but did not carry out a complete analysis of its impacts. The FEIS explains why this alternative was eliminated from detailed study (see pages II-13). Each of the proposed alternatives in the FEIS (except Alternative A) allows for the harvest of needles and twigs as well as bark.

In regards to a long-term, even-flow harvest of Pacific yew, please see the revised discussion on pages III-7 and IV-7 in FEIS. The proposed alternatives are based on an uneven, but sustainable, flow of yew material.

You feel we should have considered at least one alternative protecting some percentage of the utilizable Pacific yew found in timber sale units. We believe an alternative of this nature is not necessary because the proposed Alternatives B through G2 call for retention of yew in green tree reserves, protection of stumps and seedlings, and regeneration of yew in timber sale units. In addition, Alternative A does not allow any harvest of yew in timber sale areas.

You state the DEIS should have considered an alternative requiring special harvest techniques in Pacific yew areas -- eliminating clearcuts, for example. The alternation of timber harvesting practices is beyond the scope of this EIS. We analyzed alternatives that could be carried out with current timber harvest methods over the next five years.

You also say we should have set standards for the recovery of Pacific yew bark in the DEIS. We believe that setting specific standards for the recovery of yew bark is beyond the scope of this programmatic EIS. Recovery standards may vary because of site conditions and technology; thus, it is inappropriate to make this determination at this programmatic level. These standards are set by regions, forests and districts. Additional site-specific NEPA analysis is required for any yew harvest that would take place.

You stated the DEIS failed to analyze the effectiveness of the mitigation measures. The mitigation measures are an integral part of each alternative. The mitigation measures are basically standards and were built into the alternatives; as such, the mitigating measures were analyzed with each alternative. We have assumed that the mitigation measures are effective (see page IV-5 of the FEIS).

According to your letter the ONRC et. al. take issue with the Forest Service's and BLM's intention to allow the destruction of Pacific yew in areas without enough Pacific yew to establish a genetic reserve. In this EIS we include some exceptions to the no reserves-no harvest rule (See mitigation measures, Chapter II, page II-59). These exceptions allow for situations where yew would most likely be killed as a result of timber harvest activities, road construction, or prescribed fire. The exceptions were developed in cooperation with the Interim Guide team. For Alternative B, where harvest of yew is allowed only in

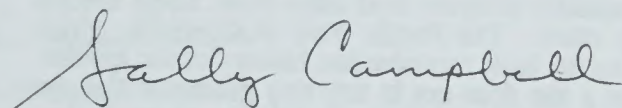
timber sales, special genetic reserves were felt to be unnecessary because yew harvest would not be allowed in lands outside of timber sales and yew in these lands would serve as reserves.

You state that given an admitted dearth of information as well as uncertainty, "... a reasonable range of assumptions should have been considered, and a corresponding range of environmental impacts described." And, all undocumented assumptions should be explained and the EIS "must substitute more concrete, quantitative analyses for these subjective descriptions of environmental consequences to fully inform the public and the decision-makers." In response: Subjective descriptions of consequences predominated due to lack of specific information about impacts from yew removal, and the extremely wide-range of physiographic regions and sites over the five states covered by the analysis. We used conclusions drawn from similar situations, and professional experience, opinion, and judgment. In future site-specific analyses qualified personnel will compute quantitative analyses and address consequences with specific prescriptions for individual sites.

We carefully considered your comments about designing and recommending an alternative that better meets NFMA and the Pacific Yew Act. In the FEIS we have identified Alternative B as the preferred alternative; this is a different alternative from the one identified in the DEIS (Alternative G1). See the FEIS pages II-23 for a description of the preferred alternative.

Again, thank you for reviewing the draft and sending us your comments. I hope this response will satisfy some of your concerns. The final will be published within a few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

03-15-1993 04:21PM FROM

TO

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#77 31593

FORESTS AND STREAMS NORTHWEST
a Washington State non profit corporation

March 15,1993

Sally Campbell
Pacific Yew EIS Team Leader
USDA Forest Service
Pacific Northwest Region
Portland, Oregon
FAX # (503) 326-2469
VOICE(503)326-7755

Dear Ms. Campbell;

We appreciate the opportunity to comment, as we have been intensely interested in this issue from the beginning. Approximately three years ago, I was privileged to sit in on an all day discussion of concerns about the imminent bark harvesting pressures that the Pacific Yew would be subjected to in the course of meeting demands for taxol production. I believe that most of the scientists employed by the U. S. Forest Service in region six involved with the biology of Pacific Yew were present. Many concerns were brought up for discussion, but the one that I was most concerned with has never been brought into sharp focus. I would like to share a quote from one of the scientists present at that meeting: "Until the beneficial effects of taxol derived from the Pacific yew were discovered, the species was considered a weed tree. The biological information required for the successful regeneration and management of the species is still lacking" M.A. Radwan, Ph.D. plant physiologist, U.S. F.S., retired.

Our principal concern is not addressed by any of the alternatives. Our concern is not how many Pacific Yews are taken, but which ones. The Pacific Yew, radically different from other N.W. forest species that have been harvested because of their economic value. The Pacific Yew is dioecious, which presents an entirely different set of problems, regarding the basic reproduction biology of the species. We are concerned that leaving 50% of the Yews on a site does not in any way guarantee that the proximity of females to males will be maintained. The possibility of taking all of the females or males, or simply removing a critical male eliminating the possibility of pollination, poses a real problem. It seems that no data exists to support the harvest criteria that has been used in recent bark harvesting. How the harvest guidelines were justified is a mystery to some of us who have attempted to understand the Yew and its natural history in Western Washington. I will speculate that the decision to use this criteria is based on pure stands of Pacific Yew in central Oregon. I include as part of our comments a copy of the cover page of (Distribution of Pacific Yew on the Mt. Baker-Snowqualmie and Olympic national forests), prepared by Jan Henderson and Robin Leasher, plant ecologists for the U.S.F.S. This document will, I feel, serve to support our concerns since Pacific Yews are generally not plentiful here. We are told that similar conditions exist in many areas of Oregon where Yew bark has been harvested.

The draft EIS does not address the problem of re-establishing Pacific Yew on the vast areas where it has been eliminated. In light of all the discussion about ecosystems, and ecosystem management, it seems appropriate that we begin by addressing this issue.

It will require a dedicated effort to understand the effects of bark harvesting, and the regeneration of Yews on the bark harvest sites.

We are also concerned that sucker sprouts generated from stumps may have some value as browse for animals, but that it is unlikely that the shrub development will survive once the stump deteriorates.

A news story in the Metro section of the Feb.12,1993 Oregonian states that Bristol Meyers Squibb's decision to get out of Oregon's old growth forests and begin relying on a semisynthetic form of the

drug Taxol should bring attention to the word "semisynthetic", which obviously has some implications around the continued requirements for Yew biomass, of one variety or another. The fact that only Taxol from Pacific Yew has been approved, that BMS's contract with the U.S.F.S. will be good through 1995 and 96 leads one to realize that they may be back seeking more Yew bark.

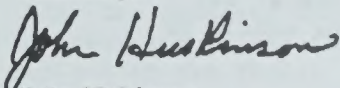
The lack of data on the Pacific Yew should have been identified two decades ago with the discovery of Pacific Yew as the source of taxol. This should have led to the timely development of a siviculture program that would have precluded the rush to meet the current needs. The yellow flags that might have popped up then could have triggered an interest at the highest levels of government in the seemingly obvious: that forests are composed of thousands of species, and that any one of them might represent another miracle drug.

Central to this issue is the fact that in the past century, Pacific Yew has been eliminated from most of its original range, from the Pacific Coast to 4000 feet in the Cascades and Olympics. Old yews found in public parks, and on private lands in low elevations in the Puget Sound Basin, bear this out. The remaining yews on public land represent a small percentage of the original yew populations that existed prior to the beginning of timber harvest in the late 1800's.

This EIS process has presented a unique opportunity to address fundamental problems, with how we, as a society, deal with natural resource decisions. Short term profits and politics have always taken precedent over preservation of natural ecosystems, aquatic resources, tourism, and recreational values that equate to sustainable forests and sustainable communities for humans.

These comments are offered with the hope that not only the Pacific Yew, but the forests of which it is an important component, can be re-established in the regions where it was once prevalent.

Sincerely;



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393



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Reply To: 1950

Date:

John Huskinson
Forest and Streams Northwest
5026 22nd Ave. NE
Seattle, WA 98105

Dear Mr. Huskinson,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We have noted that your principal concern was not addressed by any of the proposed alternatives in the draft.

In response to your comment on the basic reproduction biology of Pacific yew: Pacific yew has been found to have approximately a 1:1 sex ratio. Although yew harvest will not be planned according to sex, it is believed that by harvesting only a proportion of the trees on a per acre basis, that the natural sex ratio within populations will be maintained across the landscape. Also, future distribution of seeds by birds should be random. Any areas with unusual sex ratios, i.e., large areas of nearly pure female or pure male stands should be considered on a site-specific basis.

In response to your comments and concerns regarding reproduction and pollination biology of Pacific yew: There is very little known about the pollination biology of Pacific yew, although some research has been done for Canada yew by Dr. Taber Allison of Harvard University. Data on pollination in Canada yew cannot be directly applied to Pacific yew (although some inferences can be drawn) for two primary reasons: 1) Canada yew is a much shorter species, the average maximum height is only 1 meter, and therefore probably has much smaller pollen dispersal distances, and 2) Pacific yew is dioecious, having both male and female trees, while Canada yew is monoecious. Dr. Allison has found a strong relationship between pollen production and plant spacing and pollination success and seed set in Canada yew.

Pollen dispersal distances depend on three major factors: 1) size and density of pollen grains - the average grain size for the genus Taxus is approximately 25 um in diameter, 2) the height of pollen release, and 3) wind velocity at the time of release. The understory environment in which yew grows also probably restricts pollen dispersal.

The likelihood of reduced pollen availability effecting sexual reproduction increases as greater proportions of yew populations are removed. The effects of different harvest levels on reproduction are assessed in the Biology section of the EIS. Yew also reproduces vegetatively and it is unknown how large a role seedling production plays across the landscape, and how a reduction in seed production would effect this. This is discussed in more detail in the Chapter IV Biology section.



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Yews growing in the more open environment along streams may be a significant pollen source for individuals growing in understory habitats. Pacific yew will not be harvested along riparian areas, retaining this pollen source throughout the landscape.

We thank you for sending Henderson and Lesher's document, "The distribution of Pacific yew on the Mt. Baker-Snoqualmie and Olympic National Forest." The information from this article will be included in the "Landscape Patterns" chapter.

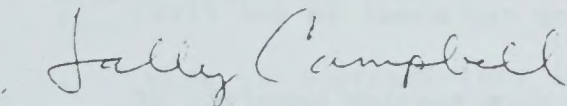
In response to your comment regarding the re-establishment of Pacific yew in areas where it has been eliminated: We believe this to be beyond the scope of this EIS, which is not intended to be a management plan for the species. Forest and management plans and site-specific documents will address the reintroduction of Pacific yew.

In response to your concerns about stump-sprouting: There is no information currently available about what percentage of sprouts can be expected to survive to maturity. Preliminary results of a sprouting study in western Oregon found that 69 percent of the stumps sprouted in unburned sale areas, (see page III-19). Numerous observations throughout the range of Pacific yew indicate that some large yew trees have grown from stump sprouts and that yew trees can survive repeated browsing and may develop a single main stem after growing above browse level. The value of yew as browse for animals varies widely depending on the availability of yew and other browse species in a particular area.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#78 31593

Quilcene Ancient Forest Coalition

P.O. Box 1813, Port Townsend, WA 98368

March 13, 1993

Pacific Yew EIS TEAM
USDA FOREST SERVICE
PACIFIC NORTHWEST REGION
P.O. Box 3623
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Portland, Ore 97208-3623

Ladies and Gentlemen:

What follows are comments from the Quilcene Ancient Forest Coalition, developed in response to the Pacific Yew Draft Environmental Impact Statement. Quilcene Ancient Forest Coalition is a forest protection organization which has worked closely with the Quilcene Ranger District of the Olympic National Forest since 1989. Our comments result from our attempts to project the management promised by the DEIS on to the Northeast Olympic Peninsula, an area not included in the DEIS' inventory.

In our opinion, this DEIS is fairly comprehensive, and contains good points and worthwhile ideas. However, we have several concerns which we feel must be more thoroughly addressed. There are also several contradictions in the DEIS which need to be explained or corrected.

The DEIS states that "comprehensive management of yew is beyond the scope of this analysis; we focus solely on the potential impacts of yew harvest" (pg II-11). It is our duty to point out that comprehensive ecosystem management of the forest is essential, given our shallows understanding of the intricacies and interdependency of the components of this system. To quote Aldo Leopold:

"If the biota, in the course of aeons, has built something we like but do not understand, then who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering."

In our ignorance, we have treated the yew as a species unworthy of protection for over a century (see Alternative A, no change from current direction, which is admitted to be detrimental to the survival of yew populations) only to find that it may offer a cure for cancer and has suddenly become economically valuable. At some point, the continuation of prior practices would have precluded the availability of yew to meet the current need. This serves to emphasize our point that the best alternative available is total ecosystem management. We can support any approach that maintains intact systems so that natural resources, both known and unknown,

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through management practices or through the preservation of systems in reserves and other set-asides is a matter of strategy; the basic issue and the responsibility of management is assuring that all identified systems remain intact. The best overall management perspective recognizes the intrinsic value of a dynamic, functional, and healthy ecosystem; there are situations where this could be accomplished through a non-manipulative approach.

At this time (as per the Pacific Yew DEIS, repeatedly), there is a grand dearth of knowledge surrounding the biology of the yew. Alternatives C through G2 are all based on regeneration times, replanting with nursery stocks, genetic variation and diversity, minimal densities for reproduction, and growth rate expectations which are not substantiated through sound scientific methods. In many areas these management plans would better be characterized as experiments: a learning experience where the results may be expected but surely are not known. This level of gambling is a matter of choice for private landowners, but it is not acceptable policy on public land.

The expectations expressed in the DEIS are based on speculative optimism. This leads to the assumptions that regeneration, creation of viable genetic reserve areas, and mitigation measures will succeed. There is a dependance on technological fixes which is not necessarily based on facts. The language used in the Pacific Yew DEIS is vague and non-committal. Effects are described as being minor, with no direction or value associations.

The entirety of the proposed management (excepting Alternative A: no management) is short-term, based on a 5 year plan whereby all yew allowed for harvest is taken, followed by a no harvest period which ends when regeneration to original levels is achieved. The stated "Even flow harvest" is 1.48 MM lbs of bark per year for 100 years (pg IV-19, Pacific Yew DEIS). However, if all yew allowed for harvest under the proposed 5 year scenario is taken, it is considered "an irreversible loss of the yew resource" (pg IV-128, Pacific Yew DEIS). Alternative B has a harvest level below the stated even-flow harvest level and Alternative C brackets that level.

- This is contradictory to the even-flow harvest philosophy, which calls for maintaining a sustained yield of the resource, which it should do by definition.
- If the harvest levels which are below even flow harvest levels lead to irreversible loss of the resource, the preferred alternative (where harvest levels far exceed these levels) must cause irreversible loss of the resource and is therefore totally unacceptable.

Who knows what other valuable resources are being laid to waste

under present practices? Or whether the demand for yew products will outweigh the need to suspend harvests until regeneration to mature levels has been reached?

The DEIS states that the "federal agencies have been able to supply all the bark that has been requested by Bristol-Myers Squibb". (emphasis ours).

- There is a projected 65% increase in processing capacity over the next year.
- The projected increase in actual demand is not presented (other than to state that it is expected to decrease toward the end of the five year period).
- The demand is determined annually based on negotiations between Bristol-Myers Squibb and the National Cancer Institute.

There should not be expectations for the Forest Service to manage the yew production in order to meet these demands. The harvest level from federal lands should be set to a level which can be easily sustained by the ecosystem, rather than on catering to the fluctuating needs of corporate interests.

Harvest of yew bark from federal lands in 1991 was approximately 800,000 pounds of dry bark, and the bark processing capacity to produce taxol was 2 million pounds of dry bark (pg III-107). If all factors remain the same, an increased harvest from federal lands to 1.5 million pounds per year would result in a stable proportional use of the yew bark processing capacity (capacity would increase to 3 million pounds per year). In that regard we see no reason to harvest at levels above the 100 year sustainable even-flow harvest scenario of 1.48 million pounds of bark.

Further, harvest at levels above those proposed in alternative B will preclude switching to a long-term even-flow harvest alternative in the event that taxol, or other unknown substance, is still in demand after the term of the proposed management. Alternative C may allow switching to a sustainable harvest since the lower range of the proposed harvest falls below the even-flow harvest level. All other harvest alternatives prohibit this option until regeneration to pre-harvest levels is successful. It is important to note that this may be a 100-200 year period, and that there are many unknown factors which will influence the process.

It is encouraging to note that reductions in yew resource available for harvest due to site-specific conditions are being acknowledged. The current decline in clear-cut timber sale offerings will also decrease the amount of available yew. Recognition of these factors helps to promote development of realistic harvest projections.

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The issue of cumulative effects needs to be seriously addressed. The direct, indirect, and cumulative effects of all the alternatives are presented in Chapter IV. All the alternatives list indirect effects as having some unknown aspects while the cumulative effects are known. If there are unknown aspects of an activity which continues over time, we find it hard to believe that the end result (of unknown events) can be predicted. Alternative B states under indirect effects that "we do not know if sprouts on surviving stumps would survive more than a few years, and if they do, how long until they are able to produce seed..." (pg IV-27). The following page, under the same alternative, cumulative effects "yew regeneration would be ensured on federal lands". This seems unreasonable since there are no provisions for yew regeneration, protection, or genetic reserves in Alternative B.

It is relevant to note that "intelligent tinkering" takes all the parts of a functioning system into account. What are the effects of the harvest which has occurred to date? Are there changes in the connectivity of populations (especially relevant if populations on state and private lands are under heavy harvest pressures)? Are there changes in genetic diversity? Since Alternative A is presented as detrimental to the yew, and that alternative is the "no action" option whereby management would continue as usual, we ask if the detrimental effects of population reduction, reduced vegetative reproduction, genetic erosion at population edges, decreased survival following fires, and decreased biological diversity have already affected the existing yew populations? Is the Forest Plan (which is under appeal) adequate to protect this and other species whose roles and values are not yet recognized? We have reason to doubt this since forest health is declining as a result of past management practices (Yew DEIS, pg III-63, citing 1991 Forest Health Assessments).

Of the proposed alternatives, Alternatives D through G2 are unacceptable for the following reasons: 1) Harvest levels are too high in partial cut units and non-sale areas. There is no information available to show that at low densities yew will be able to reproduce naturally and maintain genetic diversity. 2) Needle harvest from live trees is unacceptable when this potential demand could be met by trees cut in timber sale areas. The proposed needle harvest produces a much larger gross harvest of yew (in pounds) than the harvest of bark and the stresses imposed upon surviving individuals could lead to decreased growth, disease, reproductive difficulty or failure, and the ultimate death of the tree. 3) Harvest of bark in non-sale areas may require roads to be built in areas which would otherwise remain unroaded.

We find alternative G1, the preferred alternative, absolutely unacceptable for the above reasons. Also, this alternative has no requirements to leave a minimum number of trees per acre. There is a moderate risk of reducing yew connectivity, seed production would

be adversely affected, the genetic diversity of the populations may be decreased in future generations, and there are moderate to high impacts on spotted owl roosting habitat and prey species (Pacific Yew DEIS, Table II-1). Proposed needle harvest would increase light penetration to the forest floor, increase floor temperatures, open gaps in the canopy and create fringe habitats. This will disturb avian populations and upset the natural balance between predator and prey populations. It will affect growth and survival of remaining yew trees which have shade histories and may not be sun tolerant.

Alternative B is not acceptable based on the lack of protection afforded the yew. It is apparent that the yew has had no protection until now based on assumptions that it is a useless species. To continue this type of management (especially when illegal harvest is approximately 300,000 pounds of bark per year) would be foolhardy (at best).

SUGGESTIONS FOR FUTURE MANAGEMENT DIRECTION

Plantings. Yew seedlings should be included in the mix of shade tolerant species replanted after "diversity thinning"

Yew seedlings should also be included in the planting which follows timber harvest. If these plantings are monitored over the next 10 years, we will know a great deal more about the tree's habitat preferences than we do today.

ISSUES NOT ADDRESSED IN THE DEIS

There are several issues which appear to fall "outside the scope" of the DEIS. These issues are therefore dismissed out of hand and not considered further. Issues which fall "outside the scope" of the project cannot be ignored since they have major effects which should be incorporated into management decisions. Although all the issues cannot and should not be addressed in the EIS, they need to be recognized and their effects (or potential effects) need to be incorporated into management practices.

THEFT

On pg II-9, theft is proposed as having a possible impact on the amount of yew available for harvest. Since enforcement is outside the scope of the DEIS, this issue is not recognized or developed.

Theft is responsible for approximately 25% of the total removal of yew from federal lands (pg III-109: 1,125,000 pounds total harvest, 300,000 pounds illegal harvest). These issues may be outside the range of USFS enforcement authority, but the harvest managers cannot so readily dismiss the implications of theft on the supply of yew or on the condition

~~but, the harvest managers cannot so readily dismiss the implications of theft on the supply of yew or on the condition of the yew resource. This is a problem which needs to be recognized, since it accounts for a large percentage of the harvest, and ignoring it in the development of "sustainable" yield projections will inevitably result in an unsustainable harvest.~~

HARVEST METHODS

Harvest methods are not addressed, and indeed "Specific collection methods are beyond the scope of this EIS, and will be addressed in site specific analysis" (Pacific Yew DEIS, pg II-7). This is a sound approach, allowing individual sales to be tailored to the site being harvested and thereby addressing site specific problems. However, there should be discussion of the available methods, where they can acceptably be used, and the effects of their implementation.

The methods used to harvest bark effect regeneration rates, success of nursery trees and plantings, soils (i.e compaction, temperatures), water quality, and wildlife diversity and habitat. In light of these factors, we see a need for the site specific analysis to be conducted by qualified personnel with experience in these areas. We see a need for a detailed, accurate pre-harvest inventory which could be used to verify original populations estimates, and be used as a baseline for determining when regeneration has reached pre-harvest levels. The final Pacific Yew EIS should present standards and criteria for the harvest methods and the administration of these methods for site specific analysis.

Further, we would support entry into areas which have sustained incomplete harvests after a ten year period with the requirement that a full reassessment of the effects has been made. This would need to include a site-specific reinventory of available yew. If there has been no degradation of the site, through theft or other natural events, then harvest could occur but would not be in excess of those prior (10 yr) harvest levels, taking that harvest into account.

STATE AND PRIVATE LANDS

It seems of interest that the harvest of yew trees which are on state and private lands does fall within the scope of the DEIS. Increased harvest on state and private lands as a result of increased demands for taxol is presented as justification for higher harvest levels on federal lands (see pg IV-20 DEIS). The cumulative effects of activities both inside and outside federal jurisdiction will influence the

entire ecosystem and hence should be considered in this EIS. However, the Forest Service should manage the resources for which it is responsible in the best interest of those resources, not in the best interest of resources over which it has no control (i.e. resources on private property). Yew harvest should be held to a sustainable level and harvest should be distributed fairly across the landscape regardless of ownership so as to avoid undue ecosystem stress to lands under the management of any one owner.

Proposed Modified Alternative

- We recommend an alternative based on a modification of Alternative C. It is imperative that yew trees be represented in seed tree and shelterwood cuts. The trees left should be the most fit individuals in full reproductive maturity, thereby maximizing regeneration potential. The minimal density (TPA) of leave trees should be high enough to ensure reproductive success. This should be supported with data. The greatest number of yew trees available to harvest are in the smaller diameter size classes. The size classes chosen need to be justified with the biology and distribution of the yew in mind. It may be that these delineations should be modified to better represent the actual tree diameters in existing populations. This data has been collected during the inventory process. The percentage of yew occurring in each size class is presented for state and private lands. This data should also be made available from federal lands in a non-graphic form. Larger trees will be harvested preferentially since they yield more bark per unit effort. We recommend the smaller size class be broken into two or more classes (i.e. <6, 6-11) so that more small trees are left without affecting the harvest of larger trees. We would also recommend a maximum size limit be imposed to ensure that genomes of the most fit individuals are retained in the gene pool. Methods for taking bark from branches less than 1 inch need to be developed in order to maximize yield per tree. Since so many of the trees are shrub form, this seems to be appropriate.

None of the proposed alternatives is sufficient to protect the yew and the ecosystem in which it grows while generating adequate amounts of taxol production to meet the expected demand. To make matters worse, there is no mechanism to suspend sales in the event that another source of taxol is developed and approved before the 5 year term of this management plan expires.

- Since there appear to be new sources of taxol on the

imperative addition to any alternative.

This clause should include a mechanism to suspend sales while continuing to provide protection to the yew, thereby maximizing the potential future use of the resource.

We ask for enduring protection for the yew beyond the harvest period described by the Pacific Yew Environmental Impact Statement.

- At a minimum, the same level of protection should be afforded the yew during the regeneration phase as is exercised during the harvest period.
- If the alternative sources fail to materialize and cancer continues to increase, the demand for taxol will outstrip supply, resulting in the demise of the species, the cessation of taxol production for research needs, and the preclusion of the possible development of new pharmaceuticals from other parts of the tree.
- There should be a short, clearly-defined time period between the purchase of the sale and the beginning of the harvest. By keeping the time period between the sale and the harvest short, the existence of sales which have been sold but not harvested be minimized, thus avoiding the unnecessary waste of the resource.

QUAFCO recognizes that the production of taxol is an important use of the existing yew resource, but the current flurry of activity surrounding this plant does not justify driving it, or its habitat, to extinction. Of the Alternatives presented in the DEIS, Alternative C appears to create the least havoc. QUAFCO therefore recommends that a modified alternative C be put into place. This alternative will supply enough bark to meet a "sustainable yield" harvest while providing protection for the yew and surrounding ecosystems on which it somewhat mysteriously depends.

Cathy Butler

[Signature]

[Signature]

[Signature]

3197

QUAFCO Pacific Yew Draft EIS Response
March 13, 1993

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United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

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Portland, OR 97208-3623

Reply To: 1950

Date:

Quilcene Ancient Forest Coalition
PO Box 1813
Port Townsend, WA 98368

Dear Quilcene Ancient Forest Coalition Members,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought that went into the comments. We carefully considered your comments concerning the proposed alternatives. We noted your concerns that Alternative G1 would not provide enough protection for the species and we studied your recommendations for a modified version of Alternative C.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

In response to your comment that comprehensive management of Pacific yew should be included in the scope of this EIS: We agree with your statement that "Comprehensive ecosystem management is essential, given our shallow understanding of the intricacies and interdependency of the components of the system." However, we believe the scope of this project encompasses only the harvest of Pacific yew for production of taxol, not general management of the entire species. Management of Pacific yew is, however, within the scope of the individual forest plans. Also, as the Forest Service and Bureau of Land Management move forward with ecosystem management policies, all species, including Pacific yew, will be managed and protected.

You mention that the effects of implementing the alternatives are more like "experiments" or "learning experiences" because of the lack of knowledge about Pacific yew, and that this "level of gambling" is not acceptable policy on public land. We recognize that much is not known about Pacific yew. However, drawing upon resource specialists' knowledge of other forest species, making conservative estimates of impacts, and utilizing the Interim Guide, we feel that we gave a good portrayal of the effects and risks of implementing each alternative. The risk of implementing a program with uncertain outcomes must always be weighed against the benefit, which, in this case, is making taxol available for cancer research, development, and treatment.



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You point out that a short-term, five-year harvest is contradictory to the even-flow philosophy and that Alternative G1, where harvest levels exceed the even-flow, would cause irreversible loss of the resource and is therefore totally unacceptable. Please see the discussion of sustained yield on page III-7 and IV-7. We have also rewritten the Irreversible Losses section to clarify that the loss will be the ability to harvest more yew until the volume has grown back and that it will not be an irreversible impact to the yew species itself.

In response to your suggestion that the harvest level should be set to a level that can easily be sustained by the ecosystem, rather than on catering to the fluctuating needs of corporate interests: One of the reasons for doing an EIS was to determine if current levels of harvest were detrimental to the environment. Although, at the time the DEIS was written, the demand for yew bark from Bristol-Myers Squibb was expected to increase. The selection of a preferred alternative was based on a number of factors: impact to the Pacific yew and ecosystem, public input, and the demand or need for wild federal yew for taxol (which is related to the availability of other sources of taxol).

You state that the issue of cumulative effects needs to be seriously addressed, and that, "if there are unknown aspects of an activity which continues over time, we find it hard to believe that the end result...can be predicted." Identification of some aspects of indirect effects which are unknown does not preclude prediction of cumulative effects. With regard to your statement that there are no provisions for yew regeneration or protection in Alternative B: Alternative B requires protection of a portion of the residual yew population, no yew harvest adjacent to perennial streams, and regeneration to pre-harvest or prescribed levels. Additionally, all non-timber sale areas (as defined by the EIS) function as genetic reserves under Alternative B.

You ask, "What are the effects of the yew harvest that has occurred to date? How has this affected yew populations? Is the Forest Plan adequate to protect this and other species whose roles and values are not yet recognized?" We address the impacts of past yew harvest and past forest management in the cumulative effects sections in Chapter IV of the FEIS. As the new forest plans are revised and developed, they will address protection of Pacific yew and other species using an ecosystem approach.

We have noted your objections to Alternatives D through G2. The decision that is made has taken these and other factors into account.

In response to your suggestion that yew seedlings be planted after "diversity thinning" and following timber harvest: Many national forests and BLM districts are currently planting a diverse array of species, including Pacific yew. It is being grown in federal tree nurseries and is available for reforestation. With increased focus on diverse ecosystems serving many purposes, we expect that Pacific yew will continue to be included in the "planting mix." All reforestation plantings are monitored.

You state that issues that fall outside the scope of the project, such as yew theft, cannot be ignored since they have major effects, (for instance, theft could influence sustained yield) and should be incorporated into management decisions. Although we consider theft of yew bark to be outside the scope of this EIS, we do address it to some degree. (See FEIS pages II-8, III-100, IV-109, 115.)

You state you would like a discussion of available harvest methods, that you see a need for site-specific analysis to be done by qualified personnel, and that re-entry into areas previously harvested 10 years ago would be acceptable provided re-inventory and reassessment is done for each site: As we mentioned

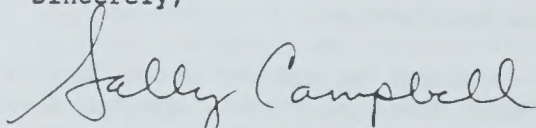
in the DEIS, harvest methods will be determined individually for each site. Site-specific analysis will be done by qualified Forest Service or Bureau of Land Management personnel prior to every yew harvest project. Assessments of impacts for each alternative in the FEIS were made assuming the current method of harvest would be used. In addition, the sentence "Specific collection methods are beyond the scope of this EIS, and will be addressed in site specific analysis" has been dropped because, in the EIS, we designate some components of harvest methods. For example, partial bark stripping is not allowed on any site and each alternative includes the harvest level that should occur. Consequently, such components are considered during the analysis of the alternatives. Other components of the harvest method will be determined during site specific analysis. Also, for most alternatives, some type of inventory will be necessary during the site specific analysis, which will be used to locate yew in the planning area and could be used to monitor regeneration success.

You also state that "the cumulative effects of activities both inside and outside federal jurisdiction will influence the entire ecosystem and hence should be considered in this EIS." We address the impacts of activities on non-federal lands in many of the cumulative effects sections of Chapter IV. You also mention that increased harvest on state and private lands is presented as justification for higher federal yew harvest. It was not our intent to give you this impression. We state that, under Alternative A, because there would be no harvest from federal lands, the demand on non-federal lands could increase substantially.

Thank you for your suggestions for a new proposed alternative. As we stated before, a new preferred alternative has been identified in the FEIS that we believe is more responsive to the current situation. We also have forwarded your suggestions about sale suspension and sale timelines to the BLM and Forest Service Regional Yew Coordinators.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final environmental impact statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

cc: Fred Page, Pacific Northwest Region Yew Coordinator
Merrill Davis, Northern Region Yew Coordinator
Kent Tresidder, BLM Yew Coordinator

#79 31593

HAUSERHauser Northwest

TELEFAX COVER LETTER

78120 Hwy. 99 S.
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Phone: (503)942-9655

Fax: (503)942-9677

Date 3/15/93TO: Telefax Number: (503)326-2469

Company: _____

Attention: Sally CampbellFROM: Phil HassickTotal Number of Pages, including this cover: 4IF YOU DO NOT RECEIVE ALL OF THE PAGES, PLEASE TELEPHONE
OR FAX US IMMEDIATELY. THANK YOU.

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HAUSER

HAUSER CHEMICAL RESEARCH, INC.

March 16, 1993

Ms. Sally Campbell
Pacific Yew EIS Team Leader
USDA Forest Service
Pacific Northwest Region
P.O. Box 3623
Portland, OR 97208-3623

HAUSER NORTHWEST, INC.
A SUBSIDIARY

RE: EIS Comments

Dear Sally,

Regrettably, my travel has resulted in some confusion as to the closure date for the comment period on the Pacific Yew EIS. In order to meet the deadline, I am faxing you our comments and request that we be allowed to provide more details within one week. I apologize for this oversight.

1. **Harvest Alternative G1.** Hauser prefers the G1 alternative because it not only provides for adequate conservation of the specie, but also gives economic incentives that will make a yew bark harvest possible. Other alternatives requiring leave tree minimums by diameter class in fact translate into a greatly reduced available harvest due to the scattered nature of the yew populations. It is important to remember that the reserves and HCAs have large populations of yew and that the purpose of the harvest is to make taxol available at an affordable price. Costs rise in indirect proportion to volumes and concentrations available for harvest. Should the federal land management agencies place heavy constraints on a yew harvest by adopting difficult harvest alternatives, collection activity will be driven off federal lands. The Pacific yew, after all, only has economic value if the harvest is competitive and worthwhile.

2. **Utilization Standards.** Hauser Northwest has had considerable experience working with the Interim Guidelines and the utilization standards. The following changes are proposed :

a. **2" Harvest Diameter -** Analysis indicates that limbs less than two inches in diameter average less than .01% taxol content, which is required by the FDA for taxol starting material. Consequently, 2" and below material can not be used for the manufacture of taxol for human use. It is also an economic concern that 63% of a yew harvester's time is spent harvesting the 11% yield that 2" to 1" material represents. This serves to greatly magnify the harvest cost which is passed on to the cancer patient.

b. **Stump Height** - A number of experienced harvesters report that high stumps show a high level of budding in the first year following cutting. The budding, however, is often temporary and dies while being replaced with a secondary budding lower down near the earth level. For this reason, Hauser Northwest, Inc. recommends a four to six inch stump height. Consideration should also be given that the bark loss from higher stumps is significant over a season. Lower stumps provide increased volumes of bark in a smaller area. In the longer term, this translates directly into fewer trees harvested.

c. **Minimum Harvest Volumes** - As a practical means to reduce harvest costs, it is necessary that harvesters be guaranteed a minimum harvest of at least 75 to 100 pounds per unit or permit. In the past, harvesting difficult small volume units resulted in extremely high costs of up to \$95.00 a pound. This not only fails to make good sense, but it also contributes directly to the treatment cost.

d. **Harvesting of Foliage** - Several districts have, in the past, attempted to minimize bark harvesting in order that a subsequent foliage harvest might take place. The consequence of a "partial harvest" or "stripping" of trees is still in question, but many affected trees appear to be dying. The tragedy of this prescription is that not only will these trees possibly die with their bark lost to the program, but needles will never be commercially used for taxol. As mentioned earlier, the F.D.A. requires a minimum content of .01% taxol for starting material and needles routinely contain one-tenth of this amount.

3. **Poaching.** Experience has shown that an unregulated harvest of Pacific yew off of any ownership leads to poaching. Hauser has spent considerable time and money in developing a "trip ticket" system backed by a computerized database, and results demonstrate that it works. Now with more companies seeking yew material, the need is even greater to prevent unlawful harvesting. The following recommendation are made to help reduce poaching incidents:

- Federal licensing of all collectors and processors of yew materials.

- Requirement of a tracking system similar or better than the current one used by Hauser. The system must clearly identify ownership, volumes, harvester and other information necessary to identify the origins of the material. The system must provide periodic reports on the harvest for verification purposes.

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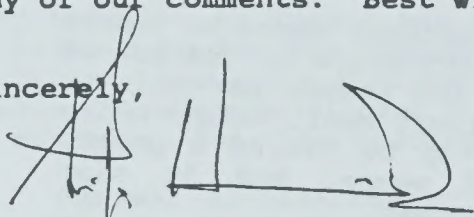
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•Surveillance by federal and state authorities of all harvest activities. This includes spot check and possibly audits of collectors and processors.

We will refine our comments over the next several days and revert to you as we progress. Please feel free to contact me either in Cottage Grove or Boulder should you have any questions regarding any of our comments. Best wishes.

Sincerely,



Phil Hassrick
Vice-President

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eisltr\fkim



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Pacific
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Date:

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Dear Mr. Hassrick,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate your review. We carefully considered your comments concerning Alternatives G1.

As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your suggestions concerning utilization standards for tree diameter, stump height, minimum harvest volumes, needle harvest, and changing the utilization standards from one inch diameter to two inch: In the EIS we do not specify utilization standards. We expect current standards to change as new information from research and field work is obtained. The most up-to-date standards, as set by each agency, will be used during yew harvest. The mitigation measures have been revised; included in the revision is the replacement of a specific stump height (12") with "the scientifically recommended height (currently 12")" to allow for any future changes. (See the FEIS page II-55, Mitigation Measures.)

We noted your suggestions for federal licensing of all collectors and processors of yew materials, a tracking system for verification purposes, and federal and state surveillance of harvest activities. These suggestions have been forwarded to agency yew coordinators Fred Page (FS), Merrill Davis (FS), and Kent Tresidder (BLM).



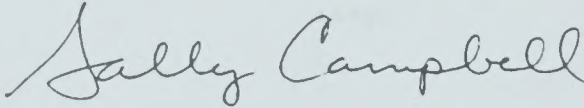
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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

CC:

Fred Page, Pacific Northwest Region Yew Coordinator
Merrill Davis, Northern Region Yew Coordinator
Kent Tresidder, Bureau of Land Management Yew Coordinator

#80 31693

CURT SWITCH
Director

STATE OF WASHINGTON

DEPARTMENT OF WILDLIFE

3904

600 Capital Way North • Olympia, Washington 98501-1091 • (206) 753-5700

TELEFAX TRANSMITTAL SHEET

DATE:

3/15/93

TIME:

9:10 AM

TO:

JOHN LOWE
REGIONAL FORESTER

FAX PHONE #

(503) 326-2469

FROM:

CONNIE ITEN
HABITAT DIVISION

FAX PHONE #

(206) 586-0248

NUMBER OF PAGES (including this sheet)

5

NOTES:

COMMENTS ON PACIFIC YEW DEIS



WASHINGTON DEPARTMENT OF WILDLIFE

Serving Washington's wildlife and people -
now and in the future

CURT SWITCH
Director



STATE OF WASHINGTON
DEPARTMENT OF WILDLIFE

March 12, 1993

USDA Forest Service, Pacific Northwest Region
Attention: John Lowe
P.O. Box 3623
Portland, OR 97208-3623

Dear Mr. Lowe:

Following are review comments on the Pacific Yew Draft Environmental Impact Statement (DEIS) by the Washington Department of Wildlife.

There seems to be two distinct groups of action alternatives in the DEIS with Alternatives B, C & D causing minor adverse environmental impacts and Alternatives F, G1 & G2 causing greater significant impacts. Alternative A, "No Action", doesn't appear to be an acceptable alternative because it prevents the collection of yew bark but does not prevent destruction of yew through incidental impacts from other forest management activities.

The preferred alternative (G1) is one of the group that has the greatest potential adverse environmental impacts. Differences between the alternatives in that group are that Alternative G2 harvests Pacific Yew from within Owl Conservation Areas, and Alternative F may have a more severe impact from the 75% removal from the partial harvest areas. This is not certain, however, because Alternative F requires that at least 2 trees per acre (TPA) be left, where available, while Alternative G1 requires no specified number.

Table II-1, page II-42, shows the following:

Impacts to wildlife are indicated as:

Minor - A, B, C & D
Moderate - G1 & G2
High - F

Impacts to T & E Species:

Minor - A, B & C
Moderate - D, G1 & G2
Mod to High - F

John Lowe
Pacific Yew DEIS Comments
Page 2

Impacts to Northern Spotted Owl:

Impacts to Prey:

Minor - A through D

Moderate - F

Mod to High - G1 & G2

Impacts to Roosting Habitat:

None - A & B

Moderate - C & D

Moderate to High - G1 & G2

High - F

From these declared impacts, it appears that only Alternatives A & B may have no effects on threatened or endangered (T&E) species. Alternatives C and possibly D have less severe effects than the remaining alternatives and those adverse effects might be "removed, avoided or compensated for" (FSM 2672.42, Standards for Biological Evaluations).

In reality, this tabular information presented in the DEIS was premature because the Biological Assessment has not yet been done (Appendix J, page J-28). The information presented is apparently a pre-assessment, subjective judgement which should have been presented as a relative or comparative potential (if at all) for impacts on T&E species, rather than in the more specific terms used which imply significant impacts.

Since an adequate amount of yew bark is available under all but Alternative A, and access to harvest the bark is adequate under all but A & B, it is questionable why one of the much greater impacting alternatives is the preferred.

In Table IV-16, page IV-124, "government expenditures" are much less under alternative G1, the preferred, than any of the other action alternatives except "B". On page S-33 it is stated, "alternatives C through F require specified numbers of yew trees to be maintained by diameter class which increases survey and layout costs above alternatives G1 and G2." This is repeated on page II-54. In the "Environmental Consequences" (page IV-118) it is stated, "any of the action alternatives would have annual expenditures to include yew bark sale preparation, issuing special use permits, management associated with these sales or permits, and oversight of on-the-ground operations." Therefore, government expenditure is apparently directly related to the reasons that alternative G1 is more environmentally impacting, and there has been a conscious trade-off of good management for lower cost.

John Lowe
Pacific Yew DEIS Comments
Page 3

Issues stated in Chapter II are to (1) provide taxol, (2) protect the ecosystem, and (3) protect the pacific yew and maintain its genetic diversity. It appears that from your own analysis Alternative C is the best choice to fulfill all of these issue statements.

The following are comments on some of the effects indicated as specific to wildlife and habitat.

Issues: Provide Taxol, Protect the Pacific Yew, and Protect the Ecosystem:

Biodiversity - "As stands regenerate and abundance of yew increases again, the contributions to genetic, species and community diversity would increase." This statement may hold true in the case of some short lived (short generation) species, since generally larger populations are the most important factor in maintaining heterozygosity. However, a long lived, slow maturing plant, such as pacific yew, would not be expected to recover from a genetic bottleneck (low population) for several generations which would likely translate into thousands of years.

Wildlife - Impacts can expect to increase with the greater harvest of yew, but are expected to result more from other activities than yew harvest specifically.

Threatened and Endangered Species - Biological Evaluation has not yet been completed. Impacts are generalizations based on assumptions that the more yew harvested, the greater the impacts. Some positive as well as negative impacts are anticipated, however, specifics appear to be related more to general wildlife and ungulates than to any specific T or E species.

Northern Spotted Owl - Again there is speculation that the more yew harvested, the greater will be the impacts on spotted owls. No real specifics are given, however.

Forest Health - This issue appears to be considered directly related to the health of Pacific yew populations, and is considered acceptable as long as yew is maintained at an "acceptable threshold level" which is said to be done no matter how much is harvested. It is difficult to understand the pertinence of this to forest health as a whole.

John Lowe
Pacific Yew DEIS Comments
Page 4

Suggestions:

Establish sustainable collection level - Alternatives C-G2 harvest 1.81 to 6.71 million yew, 4 to 13 percent of the total inventoried yew on Forest Service and Bureau of Land Management (BLM) lands. This would "preclude a long-term even-flow harvest of 0.203 million yew per year in the current rotation, but not in future rotations."

This same statement is made for Alternatives C through G2, even though the amount of bark available from federal lands varies from 0.3 million to 5.8 million pounds per year with the preferred alternative yielding 3.2 to 4.7 million pounds. Given the uncertainty for alternative sources of taxol, it would seem more prudent to select an alternative with lower yields, still meeting demands, that would extend the availability of the resource.

Mitigation Measures:

Page II-67 - Mitigation Measures for Yew Harvest in Owl Conservation Areas for Alternative G2:

There are inconsistencies between the mitigation measures for National Forest and those for BLM lands. In the buffer around spotted owl nests yew is not to be harvested within a 500 acre area or 0.5 mile of a known nest. On BLM lands no harvest is allowed within a 100 acre area around nest sites or activity centers. This appears to present a lack of consistency on which a valid appeal could be based.

Thank you for the opportunity to provide these comments. If you have questions please contact me at (206) 753-3318.

Sincerely,

Constance Iten

Constance Iten
Habitat Biologist
Regulatory Services

CI:ci



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Constance Iten
Habitat Biologist
Washington State Dept. of Wildlife
600 Capitol Way North
Olympia, WA 98501-1091

Dear Ms. Iten,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

We carefully considered your comments about the proposed alternatives. As you pointed out, there was a relationship between lower administrative costs and more stringent environmental protection in some alternatives. Our decision-makers expect a range of alternatives that consider the costs as well as environmental protection.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comment that the tabular information (Table II-1: Comparison of the Effects Between Alternatives) presented in the DEIS was premature because the Biological Assessment has not yet been done: The information we included in this table and in the discussions was our best estimate, considering the Biological Assessment was not completed at the time. The information in the table is a generalized summary. We wanted to show what we estimated the effects to be.

The Biological Assessment is completed. The US Fish and Wildlife Service and the National Marine Fisheries Service have reviewed the BA and have concurred with our finding that implementation of Alternative B is not likely to adversely affect listed species. See Appendix J for BA and related correspondence.



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You made specific comments related to the effects on wildlife. The following are our responses:

Biodiversity -- You state that "... a long lived, slow maturing plant, such as Pacific yew, would not be expected to recover from a genetic bottleneck...for several generations..." We discuss the impact on the genetics of Pacific yew from each alternative on pages IV-29 to IV-37 of the FEIS. To the best of our knowledge and experience, we do not expect the situation you describe to occur under any of the alternatives.

Wildlife, Threatened and Endangered Species, and Northern Spotted Owl -- we agree with your comments. Analysis of many specific effects require site-specific information which is not available for a programmatic EIS. Site-specific evaluations will be completed for every yew harvest project. The sections that appear to relate more to general wildlife and ungulates than to the threatened and endangered species have been revised. (See the FEIS page IV-82).

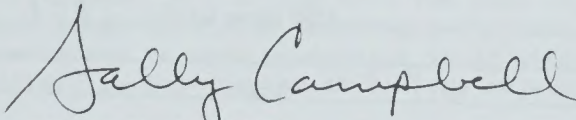
Forest Health -- In the EIS we evaluated the impact of the various alternatives on the status of forest health. For the purpose of this analysis it seemed logical to link the health of large scale ecosystems with the health of smaller scale populations of trees, such as yew. In the FEIS we define forest and ecosystem health to mean maintaining yew in such numbers that it remains a functioning part of the ecosystem. Yew ecosystems are seen as a subset of forest ecosystems. We find that a healthy (diverse and sustainable) population of yew will help maintain the health of forests as a whole. Please see FEIS page IV-72.

You suggest that we establish a sustainable collection level. Please see the FEIS pages III-7 and IV-7 for a clarification of sustained yield.

In response to your comments on mitigation measures and the inconsistencies between those for National Forest and BLM lands, DEIS page II-67: We have resolved the inconsistencies between the two agencies; mitigation measures for owl conservation areas has been revised to show no yew harvest within a 0.5 mile radius (500 acres) for both Forest Service and BLM lands.

Again, thank you for commenting on the draft Environmental Impact Statement. We hope these responses will satisfy your concerns as you expressed them in your letter of March 12, 1993. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#82 21793

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by **March 15, 1993**. Thank you.

Do you agree with the preferred alternative? no -

Why or why not?

allows for excessive harvest without adequate identification
or discussion of processing efficiency improvements that would
reduce the potential for overcutting, no owl areas are disturbed (good)

please note that the report appears quite thorough, well organized,
well presented but leaves a few important questions unanswered

I prefer Alternative D because: see above and below -

similar to GI alternative but restricts Pacific Yew
cutting; other sources of the drug may be available
than other yew varieties, synthetic derivatives and money
better spent on improving process efficiency (which is quite low).

planning a five to ten year look ahead is needed.

What other comments do you have?

1. Inadequate discussion of the silviculture of the yew tree i.e. it comes in
both male and female varieties and improper harvesting could lead to degeneration.
2. There was no discussion of an alternative use of the European Yew tree that
may have higher drug use potential and exists in larger quantities - this needs
review before any Pacific Yew decision is made.
3. with warehouses already full of P. yew material, why should more be cut and wasted,
more \$ should be spent on process improvement

(Please Print)

Name: BEN HAYWARD ID# (from label) 5808

Organization: CASCADIANS

Address: 218 S. 49th ST.

City: YAKIMA

State/Province: WASH. Zip Code: 98901

Country: USA

Pacific Yew EIS
Draft



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Ben Hayward
Cascadians
218 S. 49th St.
Yakima, WA 98901

Dear Mr. Hayward,

Thank you for your response to the draft Pacific Yew Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning Alternatives G1 and D.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

In response to your comments regarding Pacific yew reproduction and pollination: Pacific yew has been found to have approximately a 1:1 sex ratio. Although yew harvest will not be planned according to sex, it is believed that by harvesting only a proportion of the trees on a per acre basis, that the natural sex ratio within populations will be maintained across the landscape. Any areas with unusual sex ratios, i.e., large areas of nearly pure female or pure male stands should be considered on a site specific basis.

The effects of different harvest levels on reproduction are assessed in the Biology section of the EIS. Yew also reproduces vegetatively and it is unknown how large of a role seedling production plays across the landscape, and how a reduction in seed production would effect this. This is discussed in more detail in the Chapter IV Biology section.

Yews growing in the more open environment along streams may be a significant pollen source for individuals growing in understory habitats. Pacific yew will not be harvested along riparian areas, retaining this pollen source throughout the landscape.



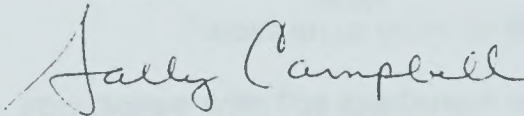
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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#83

31793

John Lowe, Regional Forester

USDA Forest Service

PNW Region

~~333 SW First Avenue~~

P.O. Box 3623

Portland, OR 97208-3623

March 14, 1993

Dear Responsible Official,

The decisions regarding the entire Pacific Yew NEPA process have been suspect, and when I simply open the DEIS volume to find the Response Form, it is not there. Irresponsible.

1) All yew bark harvest on Federal land must stop PRIOR to a decision based on a NEPA ~~mandated~~ EIS process.

2) The exclusive contract with ^(BMS) Bristol-Myers Squibb grants a privilege to a single party outside the domain and jurisdiction of the public, who hold title to the resource. Without meeting the requirements of the APA, the contract should be considered null and void.

3) BMS can now, at their own admission, synthesize the chemical needed without further harvest of yew bark, and plan to do so. F.S. & B.L.M. intentions to require further harvest under the contract provisions not only violate the public trust in natural resource protection, but become an effective act of extortion.

4) Harvest methods have allowed illegal and unwarranted debarking of trees, killing uncounted numbers of healthy trees, whose further taxol value has been wasted. Strict control by Federal employee harvest and other methods were brought up in scoping, and are not addressed within the EIS. Considering the size of the published document, analysis was inadequate.



I have found the entire decision-making process quite
fruitless, expensive and a disgusting sideshow to
federal agency complicity to defraud and deface us
of our treasure forests.

I am not alone in holding you and your ilk
responsible for the havoc being wrought on the national
forests, and still await a decision in favor of the species
in question (Alternative A), but I won't hold my
breath - as I've never seen such a decision to date.

Sincerely,

Jim Fauchald

3266

P.S. - Please excuse my
handwriting, but I'm not happy with you.



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Jim Fairchild
Homestead Road
Philomath, OR 97370

Dear Mr. Fairchild,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We can tell you are unhappy with the process and the outcome.

First, let us apologize for the misplacement of the response form in the draft document. It was actually located on the last page of the document and in a separately bound summary.

The following are responses to the four comments listed in your letter:

1. You state: "yew bark harvest on federal land must stop prior to a decision based on a NEPA mandated EIS process." We are currently required by law (the Pacific Yew Act) to harvest yew from timber sales prior to timber removal. All yew harvest has been preceded by NEPA analysis at the project (site-specific) level while the programmatic EIS was being written. Project level NEPA analysis will continue to be required even after the EIS is completed.

2. We have noted your concerns about the relationship between Bristol-Myers Squibb Company and the Forest Service and BLM.

3. You state that, given the fact that BMS can synthesize taxol without further harvest of yew bark, "FS and BLM intentions to require further harvest under the contract provisions not only violate the public trust in natural resource protection, but become an effective act of extortion." The Forest Service and BLM requested that BMS take bark from yew in timber sale units in 1993 to prevent waste and to comply with the Pacific Yew Act. This act requires that sale of yew from federal lands be negotiated only with parties that are in accordance with Section 505 of the Federal Food, Drug, and Cosmetic Act; currently Bristol-Myers Squibb is the only company that meets this requirement.

4. You state that the analysis was inadequate because strict control by federal employee harvest and other methods were brought up in scoping, and are not addressed within the EIS. Analysis was based on general harvest procedures that are currently being used. Specific procedures are dealt with at an agency level as well as at the project (site-specific) level.



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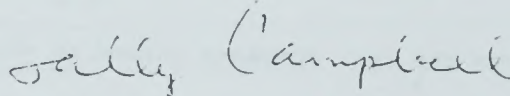
The EIS states that utilization standards, transfer of yew, permit administration, and theft prevention will follow current FS and BLM policies. (See Mitigation Measures, pages II-58 and II-60 of the FEIS.) We expect these standards and procedures to change as new information becomes available.

We have noted that you are in favor of proposed Alternative A. After reviewing all of the comments, including yours, we made several changes in the final Environmental Impact Statement. As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#84 31793

8600 S.W. Leahy Road
Portland, Oregon 97225-6424
503-292-5364
March 14, 1993 2422

USDA Forest Service
Pacific Northwest Regional Office
333 SW First Avenue, PO Box 3623
Portland, Oregon 97208-3623

Subject: Pacific Yew DEIS

Attention: John Lowe, Regional Forester

Dear Sir:

I have read through this DEIS and find that it contains considerable information on the Pacific Yew, but also allows that much is unknown about this species and its place in the ecological cycle of the forest.

1. INTRODUCTION. I have long had an interest in the forest of the Northwest and the many varieties of trees that grow across the region. I have noted many times the apparent correlation between old growth and yew trees. They are, if present at all, larger and more numerous in old growth. In many places, I have walked from old growth with large numbers of yews to an adjacent younger stand of mature trees of 30 inch DBH or so with essentially no yew. The two sites seem to be identical, just the fire history was different. Have also noted the stump sprouting and layering that occurs with the absence of fire. It is the slash burning after clearcutting that has prevented stump sprouting over much of the Region.

On two occasions, about three years ago, I cut a few yews from the Gifford Pinchot NF (with a permit) and had them milled into lumber which I use for woodworking. A very fine wood for that purpose. It seems to me, as part of this process of gathering yew bark, that the larger trees should be milled into lumber and made available to woodworkers; that is, if the wood will not be processed for its taxol content.

2. DEIS COMMENTS.

A. HARVEST. I too am concerned about the rampant use of the word "harvest" throughout the DEIS. To me, harvest implies the taking of a planted crop on a periodic basis such as corn farming or apple

growing and usually it is sustainable of a period of time. At least what is proposed in this DEIS I would classify as "gathering". Given the time it takes for a yew tree to grow to a size to yield a reasonable amount of bark (Tables III-3 & -4) and the gathering rate from Appendix F-8 for all the Alternatives except A & B, the supply would be exhausted in 30 to 90 years. I know from the few trees that I cut, it takes hundreds of years to grow 14 to 20 inch trees. I actually felt a little guilt after I counted the rings on the 20 inch tree I had cut, which started growing about the time the pilgrims arrived at Plymouth Rock. Mining and departure are two other words that come to mind for the proposed rate of taking of yew for most of the alternatives. Gathering might be a better compromise word, but harvest is a misnomer and should not be used. Even though this DEIS is for 5 years and the hope is that synthesis will eliminate the need (which is happening according to recent press reports) to collect bark in that time frame, this seem like poor sustained yield planning.

B. SIZE OF LEAVE TREES. Several of the Alternatives discuss leaving three diameter class of yew trees (<11, 11-20, >20") in partial-cut and non-sale areas. This applies in areas where yew grows in tree form. This sounds good until you realize that over much of the tree growth form range, large trees (>20") are really rather uncommon. I have observed limited areas on the Gifford Pinch and Willamette National Forest where there might be 5 or more trees over 20" per acre. Generally I have noticed most yew stands, usually growing in the understory of old growth, are under to well under 20". This is illustrated by your Figure III-1 and the discussion following that figure.

C. MINOR ERROR. Under the heading for *Olympics* on pages III-42 & -43, the narrative seems confusing as western and high Cascades seem to be the subject part of time.

D. THE ALTERNATIVES. Given how little is known about the physiology requirements for the propagation of Pacific Yew and its ecological affects on the forest landscape, a low intensity impact on the yew population is called for. Based on the discussion above (2.A.) only Alternative B is reasonable which is to gather that yew that is directly impacted by other management activities such as logging and road building. And that supply may not be very large as we resolve the issue of retaining, hopefully, most of the remaining old growth for its intrinsic ecological values.

With the apparent success with the synthesis of Taxol and Bristol-Myers announcement that they are no longer going to buy bark after the 1993 season, most of this DEIS process is moot. My suggestion is to publish a

March 14, 1993

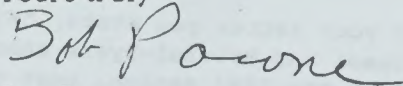
short FEIS, almost like a ROD or a combination of the two, with Alternative B as the Preferred Alternative. Table IV-16 indicates that Alternative B gives limited access which coupled with synthesis, should provide for the public need for Taxol.

I could also agree to a short time acceptance of Alternative C like five years as a Departure Alternative if at some time in the future a need arise for Taxol or some other substance produced by the yew tree. Table IV-16 indicates that Alternative C gives adequate access. All the other action Alternatives D-G2 are listed as giving adequate access yet they impact the yew population more severely and none of them should be the selected alternative.

3. FUTURE ACTIVITIES. In addition to completing a simplified DEIS/ROD, on going research should be carried out on the cultural requirement for Pacific Yew and its place in the ecology of the forest. If we change the direction of forest management away from short rotation tree farming to long term uneven-age and long rotation tree farming (which I feel we should do with our public forests), research on the growing and utilization of yew tree of size to produce usable lumber or similar products should be perused.

Please keep me on your mailing list and send me a copy of your FEIS/ROD or what ever completes this project.

Yours truly



Bob Powne



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Bob Powne
8600 SW Leahy Rd.
Portland, OR 97225-6424

Dear Mr. Powne,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments concerning the pros and cons of the proposed alternatives.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS.

In response to your comments regarding the size of leave trees: You are correct in your observation that most Pacific yew trees are less than 20" in diameter. A >20" size class was created to isolate the larger trees. Harvesting a portion of those trees would only occur if the minimum trees per acre in that size class had been met. Because there typically are not many trees in the >20" size class, we do not expect to harvest significant numbers of the larger trees under the alternatives that have minimum "trees per acre" requirements.

On page two of your letter you state, "With the apparent success with the synthesis of Taxol and Bristol-Myers announcement that they are no longer going to buy bark after the 1993 season, most of this DEIS process is moot." We have clarified the proposed action and need statement to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.) In addition, we do foresee some level of demand (probably variable) for yew from federal lands over the next five years. A variety of companies or individuals may request yew bark or needles for research and development purposes. In order to respond quickly to future demands for federal yew, we have completed the final EIS and have made a decision on how to harvest.

In response to your comments regarding Pacific yew research: There are a number of researchers currently investigating various aspects of Pacific yew biology, ecology, and genetics (see Appendix M: Pacific yew Research).

Finally, thank you for bringing our attention to the error in the Landscape Patterns section of Chapter III, pages III-42 and 43 of the draft document. This has been corrected.

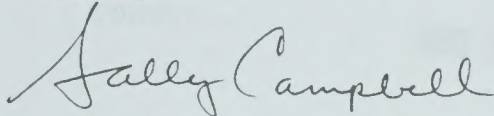


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We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#85 31793



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
911 NE 11th Avenue - Room 620
PORTLAND, OREGON 97232
503/230-5400 FAX 503/230-5435

MAR 12 1993

F/NW03

Mr. John Lowe, Regional Forester
U.S.D.A. Forest Service
333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Re: Pacific Yew, Draft Environmental Impact Statement

Dear Mr. Lowe:

The National Marine Fisheries Service has reviewed the Pacific Yew Draft Environmental Impact Statement, U.S. Forest Service, Pacific Northwest Region.

In order to provide as timely a response as possible, we are submitting the enclosed draft comments to you directly, in parallel with the transmittal to the Department of Commerce for incorporation in the departmental response. These comments represent the views of the National Marine Fisheries Service. The formal, consolidated views of the department should reach you shortly.

Questions concerning our draft comments should be directed to Steve Morris of my staff at (503) 230-5431.

Sincerely,

Merritt E. Tuttle
Division Chief

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
911 NE 11th Avenue - Room 620
PORTLAND, OREGON 97232
503/230-5400 FAX 503/230-5435

F/NW03

DRAFT

Mr. John Lowe, Regional Forester
U.S.D.A. Forest Service
333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Re: Pacific Yew, Draft Environmental Impact Statement

Dear Mr. Lowe:

The National Marine Fisheries Service (NMFS) has reviewed the referenced Draft Environmental Impact Statement (DEIS) addressing various harvest scenarios for Pacific Yew. The following comments reflect NMFS responsibility for protection and enhancement of marine, estuarine and anadromous fishery resources and their supporting habitats.

Need For Action

Although the DEIS does not quantify the need for yew bark, it does state that "The current annual processing capacity can convert 2,000,000 pounds of dry yew bark into 130 kilograms of taxol."¹ The DEIS further states that all action alternatives (B through G2) would supply enough bark, in combination with bark from non-federal lands, to meet this demand. The DEIS does not predict that the demand for yew bark will increase during the period covered. Rather, it states that "Until other sources of taxol are available, the harvest of bark from Pacific yew in the wild can provide an immediate short-term source of taxol".²

Alternatives

Alternatives identified in the DEIS range from Alternative A, which gives no emphasis to Pacific yew bark harvest, but "... emphasizes all resources according to forest plans and BLM resource management plans..." to Alternative G2, which "... emphasizes efficiency of collection as well as entry into owl conservation areas to provide the highest level of bark production with moderate protection of Pacific yew and the ecosystem in yew harvest areas." The DEIS identifies Alternative

¹ DEIS. Page I-5, paragraph 2, Demand.

² DEIS. Page I-4, paragraph 1.



G1, which would emphasize efficiency of bark collection and moderate to high production with moderate protection of the ecosystem in harvest areas, as the preferred alternative.

Impacts on Aquatic Resources

Both the no-action alternative (A) and Alternative B (utilization of bark where it would otherwise be wasted with harvest dependent on timber harvest programs) show no impact on aquatic resources, whereas Alternatives C through G2 are described as having "negligible to minor" impact.³ However, the document states that the risk of impact to aquatic resources "... would increase proportionately with the level of yew harvest: Alternative B - least impact; Alternative C - next largest impact; followed by Alternatives D, F, G1 and G2."⁴

Conclusion

Previous land use practices have caused significant damage to NMFS statutory anadromous fish resources throughout the Northwest Region, including most of the Pacific yew native range. Therefore, it is imperative that future land disturbing activities, such as yew bark harvest be planned to avoid or minimize impacts to these already damaged resources. Most of the alternatives addressed in the DEIS (C through G2) would result in damage to aquatic systems beyond those contemplated in existing forest plans, whereas Alternatives A and B would result in no additional damage to aquatic resources. Given that:

- 1) Alternative B will meet current demand for yew bark;
- 2) Alternative B would not result in additional impacts on aquatic resources; and, 3) yew bark is seen only as an immediate short-term source of taxol, we do not believe that selection of a potentially more damaging alternative (G2) is warranted. We, therefore, recommend selection of Alternative B as the most reasonable means of meeting the demand for yew bark contemplated in the DEIS.

³ DEIS. Table II-1.

⁴ DEIS. Page II-49, paragraph 4, Soils, Water and Aquatic Habitat.

Thank you for the opportunity to provide these comments. Please refer questions on this issue to Steve Morris of my staff at (503) 230-5431.

Sincerely,

Merritt E. Tuttle
Division Chief



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Merritt E. Tuttle
U.S. Department of Commerce
Environmental & Technical Services Division
911 NE 11th Ave. Room 620
Portland, OR 97232

Dear Mr. Tuttle,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your comments on Alternatives A and B.

You recommend Alternative B, given that it would meet current demand for yew bark; it would not result in additional impacts on aquatic resources; and yew bark is seen only as an immediate short-term source of taxol.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for yew from federal lands. In response to this change in demand, public comment, and agency comment such as yours, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

The need and demand for federal yew is less uncertain than it was when the DEIS was printed. Although we expect the demand for wild Pacific yew to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You state that most of the alternatives addressed in the DEIS (C through G2) would result in damage to aquatic systems beyond those contemplated in existing forest plans. In our professional judgement, all of the proposed alternatives avoid and minimize effects to aquatic systems to such a degree that any of the minor effects that could occur would be well within forest plan expectations. Alternatives B through G2 do not allow yew harvest within 75 feet of all perennial streams. The mitigation measure that addresses streamside buffers has been revised to emphasize that 75 feet is a minimum buffer and where forest plans or resource management plans set wider buffers, these will be adhered to. (See page II-56 in the FEIS.)



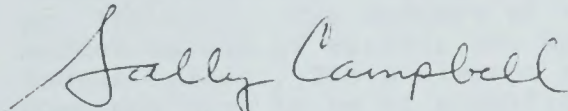
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In addition, any potential impact to aquatic ecosystems will be addressed at the project level during site-specific NEPA analysis.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

A handwritten signature in cursive script that reads "Sally Campbell". The signature is written in dark ink and is positioned above the printed name and title.

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

#86 31893

Karuk Tribe of California



ADMINISTRATIVE OFFICE:
POST OFFICE BOX 1016
HAPPY CAMP, CA 96039
(916) 493-5305

DEPARTMENT OF NATURAL RESOURCES
POST OFFICE BOX 282
ORLEANS, CA 95556
(916) 627-3446 FAX (916) 627-3448

March 12, 1993

Pacific Yew EIS Team
USDA Forest Service
P.O. Box 3623
Portland, Oregon 97208-3623

This letter is in response to your request for comments and suggestions concerning the Draft Pacific Yew Environmental Impact Statement (EIS).

The Karuk Tribe of California (Karuk Tribe) is a sovereign aboriginal people, that have lived on their own land since long before the European influx of white men came to this continent. We are a Federally Recognized Indian Tribe with over 3000 tribal members. The Tribal Executive Council is the formally constituted governing body of the Karuk Tribe, entrusted with a responsibility to protect, preserve and promote the ceremonial and subsistence rights of the Karuk people.

The Karuk Tribe's aboriginal territory has been previously mapped and includes an estimated 1.038 million acres, within the Klamath River Basin (Figure 1). The bulk of the lands and tributary streams within this aboriginal territory are managed by the Klamath and Six Rivers National Forest's as the Tribe's defacto trustee. The Tribe believes that the federal government not only has a trust responsibility to deal with Tribes on a government to government basis, but also has a trust duty to protect the natural resources upon which Tribes are wholly dependent. This federal trust obligation imposes strict fiduciary standards on the conduct of executive agencies, not limited to the Bureau of Indian Affairs, in their dealings with Indian Tribes. Case law dictates that federal agencies cannot subordinate Indian interest to other public purposes.

The third highest number of responses to your newsletter inquires concerning Pacific yew management emphasized that you "consider social, cultural and tribal impacts of collecting the yew" (Pacific Yew DEIS, Appendix A-2). In addition, the second highest response to your February newsletter were the expressed concerns that more attention should be given to the spiritual, cultural and historical value of the yew. Despite these numerous

response's to your request for comments, these comments were interpreted by the Pacific Yew Interdisciplinary Team as suggestions rather than as significant issues in the EIS.

We strongly object to your apparent disregard for our cultural and tribal concerns. The DEIS gives only passing reference to cultural non-market values of yew (Pacific Yew DEIS, pg. III-110). The authors of the DEIS focus primarily on the market values of Pacific yew and do not reflect the views of Indian Tribes. The statement that management of the Pacific yew, does not seem to be of significant concern to Native Americans, based on available information (Pacific Yew DEIS, pg III-99), is unfounded. Apparently, little or no attempt has been made to ascertain what Indian concerns might be. Indian Tribes have significant concerns about general forest and wildlife/fish resources and management on federally managed lands. We are deeply concerned about your attempt to justify the vast exploitation of Pacific yew resources. The social, cultural and tribal impacts of collecting Pacific yew are substantial issues that are not adequately addressed within you Draft EIS.

Yew bark has been partially stripped from live trees by native people for countless generations and used for medicinal purposes. The U.S. Forest Service (USFS) and U.S. Bureau of Land Management (BLM) have made no attempt to evaluate other bark extraction methods that would not result in cutting the Pacific yew tree. You state that "Partial-stripping of yew bark is not currently practiced because of the unknown effect on the viability of the tree and the fact that more trees would be affected" (Pacific Yew DEIS, pg. II-7). The consequences of cutting yew trees versus partial-stripping have not been adequately presented in the DEIS. "A typical 100-year old yew tree has an average diameter of 4 to 8 inches" (Pacific Yew DEIS, pg III-22). Due to the prolonged length of time required to grow Pacific yew for bark harvest, the USFS and BLM should seriously evaluate other bark harvesting methods.

"After a decade of trying, chemists are finding total synthesis of the taxol molecule difficult" (Pacific Yew DEIS, pg III-111). Yet, "the five-year harvest program covered by this analysis was predicated on the assumption that at the end of five years Pacific yew bark would no longer be needed as a source of taxol" (Pacific Yew DEIS, pg. III-106). This assumption has no scientific foundation given the difficulties that chemists have encountered for the past ten years. The authors of this DEIS have not provided sufficient scientific evidence that an alternative source of taxol will be found within the next five years. Therefore, every effort to protect the long-term supply of Pacific yew should be initiated, rather than the harvest level that is recommended in Alternative G1.

Alternative G1 is not predicated on a sustained yield harvest management system. "This alternative would preclude an even-flow sustained yield harvest of yew in the present rotation..." (Pacific Yew DEIS, pg. II-36). "There would be no minimum number of yew trees or shrubs left after harvest, allowing harvest in areas of sparse yew distribution" (Pacific Yew DEIS, pg. II-34). "The large amount of acreage impacted under this alternative has more potential than other alternatives for long-term cumulative effects" (Pacific Yew DEIS, pg. IV-73). "Alternative G1 would allow the harvest of 100 percent of utilizable yew in timber sale units (excluding the residual green tree reserve) and 50 percent, with no minimum number of leave trees of utilizable size yew, in partial-cut sale units and non-sale areas" (Pacific Yew DEIS, pg II-34).

The authors fail to demonstrate the need for yew harvest levels beyond existing timber sale areas. Table S-1 clearly illustrates that Alternative B "would supply enough bark in combination with bark from non-federal lands to meet current demand" (Pacific Yew DEIS, pg. S-20). There is also concern about the potency of taxol when excess amounts of yew bark are stored for prolonged periods. Since implementation of Alternative B poses environmental problems that are currently not being adequately addressed by the USFS and BLM (i.e., removing most of the seed producing yew in cut areas), it is not justifiable to adopt a cutting strategy that would have even greater impact on the yew tree environment until current environmental impacts are resolved.

Increased harvest of Pacific yew beyond current levels would further complicate the already poorly managed yew resource. The heavy dependence by USFS and BLM on clearcutting as the principal source of yew harvest, threatens the survivability of this tree species and does not provide adequate protection for Tribal yew resources. In addition, neither agency has demonstrated their ability to protect Tribal and public yew resources from illegal exploitation. For example, "The Forest Service estimates that during 1991 about 300,000 pounds of bark were stolen. (About 825,000 pounds were harvested legally). The Bureau of Land Management was unable to provide any information about the amount of bark stolen from their lands during 1991" (Pacific Yew DEIS, pg. III-109).

The Karuk Tribe is especially concerned about increased Pacific yew harvest throughout the Siskiyou province and within our Aboriginal Territory. "Pacific yew in the Siskiyou province is found in the western hemlock, white fir, Douglas-fir, Pacific silver fir, and western redcedar vegetation zones (Atzet and Wheeler, 1984). Pacific yew is relatively widespread in the northern portion of the province although it is still not abundant" (Pacific Yew DEIS, pg. III-43). Widespread

clearcutting has already occurred throughout this region. "Alternatives F, G1 and G2 may reduce regeneration as a result of yew harvest at 75 or 50 percent levels with no minimum trees per acre retained. Effects may be greater in areas of sparse yew population where there may not be adequate numbers of sexually mature trees left following harvest" (Pacific Yew DEIS, pg. S-25).

The "sustainability of the Pacific yew as a species depends upon the amount of yew harvested, the range of acres harvested, the ability of the yew to regenerate and maintain its genetic diversity and adaptability, and protection efforts" (Pacific Yew DEIS, pg III-120).

"Like most tree species, Pacific yew does not produce a good seed crop every year" (Pacific Yew DEIS, pg. III-19).

"Yew trees are wind-pollinated" (Pacific Yew DEIS, pg III-18). Seed is dispersed by birds and small mammals.

"Germination of Pacific yew seeds usually occurs in heavy organic matter" (Pacific Yew DEIS, pg. III-19).

"Yew regeneration (sprouts or seedlings) can be found in old clearcuts where the slash has been burned (Bolsinger, 1991), and in young forests that originated following fire (Spies, 1991). But it occurs in much smaller numbers in these situations than in mid-to-late seral stands that have little to no fire history (Spies, 1991)" (Pacific Yew DEIS, pg. III-31).

"Past broadcast burning practices have reduced, and undoubtedly eliminated, yew from many sites" (Pacific Yew DEIS, pg III-32).

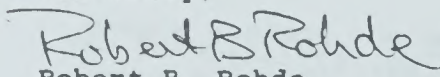
The USFS and BLM should continue to harvest Pacific yew only in scheduled timber harvest areas where Pacific yew is not the target species for harvest. A moratorium on expanded Pacific yew harvest should be implemented immediately on all Federal lands until forest management techniques are developed which can guarantee the long-term survivability of this tree species in timber sale and non-sale areas. For example, "Yew can be retained on a burned site, provided that it is part of the prescribed fire objective" (Pacific Yew DEIS, pg. III-32).

The Karuk Tribe is willing to work with the USFS and BLM to inventory existing yew resources, evaluate the role of yew in the

natural ecosystem and develop a long-term sustained yield strategy. The federal government has a trust responsibility to manage Pacific yew on a landscape scale. As the search for alternative sources of taxol continues, sound long-term management of public yew resources will help guarantee that there will always be a steady source of taxol to help Americans recover from cancer.

Please provide a written response to this correspondence to our Department of Natural Resources at the above address.

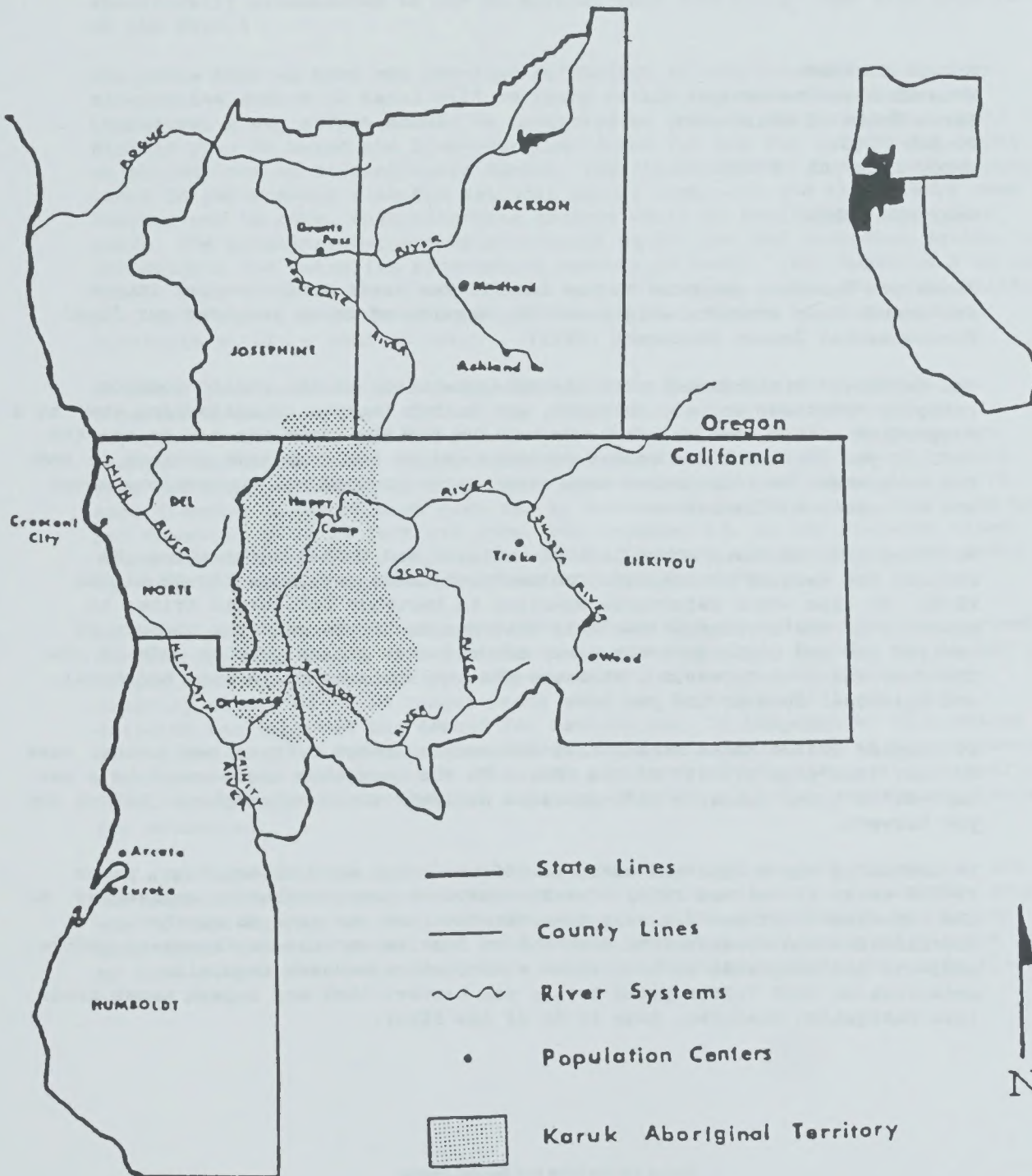
Sincerely,


Robert B. Rohde
Natural Resource Manager

cc. Mike Srago
Sonia Tamez

KARUK ABORIGINAL TERRITORY

Two-state/Five-county
Area of Influence



R. Kranz 1983



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Robert B. Rohde
Natural Resource Manager
Karuk Tribe of California
PO Box 1016
Happy Camp, CA 96039

Dear Mr. Rohde,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. Your comments were carefully considered as we prepared our final Environmental Impact Statement (FEIS).

You expressed disagreement with the interpretation of the public comment category "Consider social, cultural, and tribal impacts of collecting yew" as a suggestion rather than an issue. We believe the big issue is: how to use the Pacific yew for taxol for cancer patients and at the same time protect it and the ecosystem. We interpreted many other major concerns as suggestions about how to approach this issue.

We noted your concerns about lack of cultural and tribal information. We revised the section on American Indian Trust Lands (see page III-98 of the FEIS). We also added references specific to Northern California tribes to Appendix L, the section of the DEIS that documents the cultural history of Pacific yew and highlights the array of uses that native peoples made of yew. The discussion in Appendix L stresses the utilitarian, religious, medicinal, and spiritual uses of the yew tree.

In Chapter III we added substantial information about cultural and tribal uses of yew. (See page III-117 of the FEIS.) In the case that there would be a yew harvest on trust lands, a site-specific analysis would be completed before any yew harvest.

In assessing the social and economic effects under each alternative, pages IV-109 to IV-117 of the FEIS, consultation with local tribes is emphasized. As the concerns about yew use vary considerably from one area to another, coordination and consultation with Native American tribes is necessary before projects are proposed. We have added a mitigation measure requiring consultation with tribes prior to any yew harvest that may impact trust lands (see Mitigation Measures, page II-55 of the FEIS).



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In response to your statement that the consequences of cutting yew trees versus partial-stripping have not been adequately presented in the DEIS: We analyzed the two methods of harvest, whole tree cutting and partial needle removal, that were recommended by the Pacific Yew Technical Committee, an interagency group of scientists charged with developing guidelines for conserving and managing Pacific yew prior to implementing the EIS.

The biologists, ecologists, and geneticists on this committee are among the most knowledgeable about Pacific yew in the Pacific Northwest. They specifically recommended to not do partial bark stripping. (See also page II-9 of the FEIS.)

You state that we have not provided sufficient scientific evidence that an alternative source of taxol will be found within the next five years and therefore, every effort should be initiated to protect the long-term supply of Pacific yew: We based the five-year time frame for the EIS (page I-5 in FEIS) on projections by Bristol-Myers Squibb, the pharmaceutical company developing taxol in partnership with the National Cancer Institute and the primary user of federal yew to date, that alternate sources would be available within five years. The agreement between Bristol-Myers Squibb and NCI obligates Squibb to investigate and establish alternative sources of taxol. (See Appendix E of the FEIS.) And, in fact, there are currently some sources, other than wild Pacific yew, from which taxol is being extracted and that should be commercially available within a year or two.

We noted your comments concerning Alternatives B and G1; we carefully considered them. We have revised our explanation of sustained yield in accordance with NFMA (36 CFR 219.3) (page III-7 of the FEIS). We have also changed the terminology from "no minimum" in Alternatives G1 and G2 to "one tree per acre" minimum. In both these alternatives 50 percent of the yew in each diameter class on each acre can be harvested, as long as at least one tree per diameter class is left per acre. For example, if, in one diameter class, there are 50 trees, 25 could be harvested; if there are two trees, one could be harvested; if there is one tree, none could be harvested.

We noted your suggestion that the USFS and the BLM should continue to harvest Pacific yew only in scheduled timber harvest areas where Pacific yew is not the target species. As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. This new preferred alternative would generally follow your suggestion, although a number of other alternatives are available for selection.

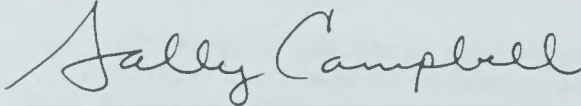
You also note that Alternative B would remove most of the seed-producing yew in cut areas: The mitigation measures for timber sale units do require that some yew be kept as part of the green tree reserve, that yew adjacent to the unit be left unharvested to serve as a seed source, and that the source of planted yew be from within the local management area (see Mitigation Measures, page II-55 of the FEIS).

You comment that the heavy dependence by the USFS and BLM on clearcutting as the principal source of yew harvest threatens the survivability of this tree and does not provide adequate protection for tribal yew resources: Our analysis showed that impacts to the survival of Pacific yew would be minimal for Alternative B, the alternative that harvests yew only in timber sale units (including clearcuts) (see pages II-40 to II-54, Summary of Effects Table and discussion, and Part One of Chapter IV of the FEIS). The number of acres harvested under Alternative B is an estimate based on 1992 timber sale projections; the actual number of sale acres for this year is much lower and is expected to continue to decrease in future years, thus continuing to decrease the impact on yew from clearcutting.

As to the issue of theft: Following implementation of tight accountability standards in 1992, occurrences of theft have dropped dramatically.

We hope these responses will satisfy your concerns as you expressed them in your letter of March 12, 1993. Again, we thank you very much for your interest in this project and concern for the well being of the environment, including tribal concerns and the yew tree. We appreciate your offer to work with us in finding out more about the yew tree. We will consult with the Karuk Tribe and other tribes on site-specific projects that may impact trust lands.

Sincerely,



SALLY J. CAMPBELL
Team Leader, Pacific Yew EIS Team

cc:

Mike Srago, Yew Coordinator Pacific Southwest Region
Sonia Tamez, Pacific Southwest Region

#87 31993

Pacific Yew Draft Environmental Impact Statement

What do you think?

Please let us know by March 15, 1993. Thank you.

Do you agree with the preferred alternative? NO

Why or why not? JANUARY 25 BRISTOL MYERS ANNOUNCED THEY WILL NO LONGER BE COLLECTING YEW BARK THIS YEAR. THE "MEMORANDUM OF UNDERSTANDING" IS NULLIFIED. YOU DID NOT ANALYZE A ~~ALTERNATIVE TO THE BARK~~. THE PUBLIC DOES NOT BENEFIT FROM THE FREE GIVAWAY IE: BRISTOL MYERS WILL CHARGE THEM. PACIFIC YEW NEEDS TO REGENERATE. TAXAINE HAS NOT BEEN SYNTHESIZED. WHAT LEGAL DOCUMENT ARE YOU PROCEEDING ON RIGHT NOW?. THE ZELENSKA CO. OF THE UNIVERSITY OF MISSISSIPPI IS IN THE PROCESS OF UTILIZING TAXOL FROM NEEDLES. THE DEIS DOES NOT ADDRESS OTHER ALTERNATIVES. WEYHRHOWSER HAS FIVE MILLION PACIFIC YEW NOW GROWING ON ITS PLANTATION AND NO DEIS RESEARCH TEAM HAS MENTIONED SUSTAINED YIELDS OR REGENERATION RATES. MR. ROBT. HOLDEN STATED THAT HIS FIRM (BIOMASS) CAN GET TEN TIMES AS MUCH TAXOL FROM THE NEEDLES. RIGHT NOW BRISTOL MYERS IS EXPERIMENTING WITH TAXOL FROM THE HIMALAYAS. UNTIL THEIR RESEARCH IS FINISHED THERE IS NO NEED FOR HARVEST FROM PUBLIC LANDS. PACIFIC YEW HAS ONLY SHOWN LIFE OF UP TO 10 MONTHS WHEN CUT. UTILIZATION RATES NOW DEMAND A STOP TO HARVEST UNTIL FURTHER PROOFS HAVE BEEN SHOWN OF POTENCY. THIS DEIS IS NOT CONSISTENT WITH THE PACIFIC YEW ACT. ESTIMATES ARE MISLEADING FOR

I prefer Alternative _____ because:

SIZE AND GIRTH RATES. NUMBERS ALONE CAN NOT SUBSTANTIATE A REASONABLE PLAN WHEN SOME TREES HAVE LESS THAN FOUR INCH DIA. RENDERING THEM USELESS FOR HARVEST. NO ALTERNATIVE HAS BEEN PROPERLY ANALYZED REQUIRING SQUIB TO TRANSITION FOR USING NEEDLES AS MENTIONED ABOVE. IT HAS NEW BEEN CLEARLY DEMONSTRATED THAT TAXOL CAN BE PREPARED THROUGH PARTIAL SYNTHESIS. THIS REQUIRES THAT FEDERAL AGENCIES HAVE AN A OBLIGATION THAT YEW COLLECTION ONLY OCCUR WHEN ALL OTHER AVAILABLE TECHNOLOGIES HAVE AND WILL BE UTILIZED TO THE MAX. BEFORE ANY SUCH HARVEST BEGIN. THE FOREST SERVICE SHOULD NOT PROCEED WITH YEW COLLECTION OUTSIDE EXISTING TIMBER SALES SINCE THERE ARE NOW SO MANY NUMEROUS UNKNOWN CONCERNING HOW FUTURE COLLECTION WILL MEET THE PREVIOUSLY DESCRIBED GOALS AS OUTLINED IN THE DEIS.

What other comments do you have?

(Please Print)

Name: LEE R. KILPATRICK

ID# (from label) 3642

Organization: PEK INDIVIDUAL PUBLIC INTEREST WATCH

Address:

City: P.O. BOX 98

State/Province: WOLF CREEK, OREGON 97497

Country: _____ Zip Code: _____



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

333 S.W. First Avenue
P.O. Box 3623
Portland, OR 97208-3623

Reply To: 1950

Date:

Len Richardson
PO Box 98
Wolf Creek, OR 97497

Dear Mr. Richardson,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought. We carefully considered your remarks about not harvesting Pacific yew for taxol outside of timber sales. Alternative B proposes harvesting yew only in timber sale units and so may come closest to what you would recommend.

As you are probably aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation; the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

We did not analyze alternative methods of obtaining taxol in the draft EIS because such analysis is out of the scope of this project. We did, however, include information on alternative sources of taxol, and updated this information in the final EIS. (See page III-102 of the FEIS.)

In your response letter you state, "Estimates are misleading for size and girth rates. Numbers alone can not substantiate a reasonable plan when some trees have less than four inch dia. rendering them useless for harvest." Trees three inches and above are being harvested in the field. During the simulation of the harvest amount for each alternative, that same diameter is used to differentiate between cut and leave trees. Only those trees above three inches are used to calculate "trees available for harvest" and "maximum pounds dry bark." The "Total trees in inventory area" (Table IV-1 through Table IV-13), and "Stems" (Table III-2), do include both cut and leave trees in order to give the reader a feeling for the gross number of Pacific yew trees present.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The Final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,

SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team



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#88 31993

KLAMATH FOREST ALLIANCE
BOX 820
ETNA, CA. 96027

5/8/0

USDA, Forest Service
Pacific Northwest Regional Office
333 SW 1st Ave
PO Box 3623
Portland, Or. 97208-3623

3/14/93

Dear Forest Service,

Enclosed are comments for the Forest Service/BLM Pacific Yew Draft EIS submitted by the Klamath Forest Alliance.

Prior to Bristol-Meyers recent announcement that they will no longer be collecting yew bark this year in Pacific Northwest's forests, the Forest Service and BLM have released a Draft Environmental Impact Statement (DEIS) recommending collection of Pacific Yew bark at a rate which will exhaust usable supplies after just a few years.

As discussed above, Bristol-Meyers' recent announcement undercuts the underlying purpose and need to which the Forest Service and the BLM are responding in the proposed action. The vast majority of world demand for bark comes directly from Bristol Meyer's Squibb (BMS). If BMS does not need bark from federal lands in 1993, then the need to which the federal agencies are responding has substantially evaporated.

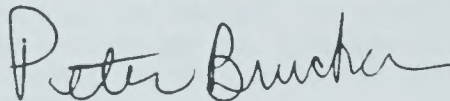
In addition to this principal point, the DEIS is inadequate for the following reasons:

1. No alternative was properly analyzed requiring Bristol-Meyers Squibb to transition to using sustainable needles, rather than continuing to deplete the existing non-sustainable bark resource.
2. Estimates of total Pacific Yew numbers are misleading as most of these trees are not of commercial size by present collection standards, and trees of these smaller diameters are often burned or otherwise wasted.
3. BMS has not been required to account for the millions of pounds of bark that has already been collected under the promise that it would be provided to cancer patients for "compassionate care" at minimal charge. With recent Food and Drug Administration (FDA) approval, BMS stands to make enormous profits from bark that has been stored awaiting commercial approval while the drug taxol has remained in scarce supply.

4. The federal agencies proposed direction is not consistent with the recently passed Pacific Yew Act requiring that federal agencies' preferred clearcut and burn management practices not have adverse impacts on the sustainability of the Pacific Yew resource.

Thank you for providing us the opportunity to scope this important issue. We hope that it will direct you to make an "excellent" decision.

Respect the Earth,



Peter Brucker
for the Klamath Forest Alliance
Box 820
Etna, Ca. 96027



United States
Department of
Agriculture

Forest
Service

Pacific
Northwest
Region

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Portland, OR 97208-3623

Reply To: 1950

Date:

Peter Brucker
Klamath Forest Alliance
PO Box 820
Etna, CA 96027

Dear Mr. Brucker,

Thank you for your response to the Pacific Yew Draft Environmental Impact Statement. We received approximately 90 responses from people who reviewed the draft EIS; we appreciate the time and thought.

As you are aware, Bristol-Myers Squibb Company recently announced it no longer needs wild yew from federal lands. This decision has impacted the demand for federal yew. In response to this change in demand and to public input, Alternative B has been identified as the preferred alternative for the final EIS. The proposed action and need statement has been clarified to reflect the current situation, but the changes made for clarification are minor. (See pages I-2 to I-5 of the FEIS.)

Although we expect demand for wild Pacific yew bark to drop substantially, we do foresee some level of demand, probably variable, for yew from federal lands over the next five years. A variety of companies or individuals may request relatively small quantities of yew bark or needles for research and development purposes.

You state that no alternative was properly analyzed requiring Bristol-Myers Squibb to transition to using sustainable needles. Each of the proposed alternatives (except Alternative A) allows for the collection of yew needles should there be a need for them. The purpose and need of this EIS is to disclose the effects of yew harvest on the environment; requiring a private company to process a product in a certain way is beyond the scope of this document.

You also state, "Estimates of total Pacific Yew numbers are misleading as most of these trees are not of commercial size by present collection standards, and trees of these smaller diameters are often burned or otherwise wasted." The alternatives call for harvest of trees three inches and above. During the simulation of the alternatives, that same diameter is used to differentiate between cut and leave trees. Only those trees above three inches are used to calculate "trees available for harvest" and "maximum pounds of dry bark." The "Total Trees in Inventory Area" (Tables IV-1 through IV-13), and "Stems" (Table III-2), do include both cut and leave trees in order to give the reader an idea of the gross number of yew trees present.



Caring For the Land and Serving People



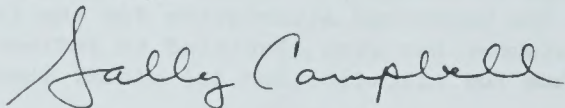
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In response to your comment that Bristol-Myers Squibb Company had not been required to account for the millions of pounds of bark already collected and that with recent FDA approval, the company stands to make enormous profits: The impacts of the FDA approval of Bristol-Myers Squibb Company's New Drug Application (NDA) are outside the scope of this proposal and analysis.

In response to your comment that the Yew Act requires that preferred clearcut and burn management practices not have "adverse impacts on the sustainability of the Pacific yew resource:" We believe that all the proposed alternatives (except Alternative A, the no-action alternative), comply with the Pacific Yew Act. Minimizing adverse effects from timber management and harvest is dealt with in the alternatives themselves (see pages II-19 to II-38 of the FEIS) as well as in the Mitigation Measures (page II-55). Both the alternatives and mitigation measures are fashioned very closely after "An Interim Guide to the Conservation and Management of Pacific Yew," which was developed to ensure sustainability of the species. The alternatives meet the definition of sustained yield according to NFMA. See the discussion of sustained yield in Chapters III and IV of the FEIS.

We hope these responses will satisfy your concerns. Thank you again for your interest in this project and your concern for the well being of the environment, including human lives and the Pacific yew tree. The final Environmental Impact Statement will be published and available to the public within the next few weeks.

Sincerely,



SALLY J. CAMPBELL
Leader, Pacific Yew EIS Team

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